



Evolution Syllabus

Department of Biology

BIOL 2040 Fall 2024



Fruit fly clipart from illustAC

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.

What does this mean for BIOL 2040 Evolution?

We are incredibly privileged to be learning on the land that was Traditional Mi'kmaq Territory. Although the Mi'kmaq signed Treaties with the British Colonists, they never gave up their land. We are guests and settlers on their land, and we need to learn and understand their struggles and experiences over the past hundreds of years. In BIOL 2040, we hope to highlight research achievements and discoveries of under-represented scientists in this field throughout the course, and we encourage you to do the same when doing your Evolution in the News assignment!

Course Instructor(s)

Name	Email	Student Support Hours*
LECTURES:		
Dr. Melanie Low (she/her)	TBD – email Jen in the meantime!	By appointment
LABS:		
Dr. Jen Frail-Gauthier (she/her)	jfrail@dal.ca	Mondays 1-2 PM (may be virtual, or in-person); LSC 4015

**Student Support Hours (also known as Office Hours) = these are when the instructors are available to talk with you about course material or other course-related concerns/questions you may have.*

Communication Disclaimer: Lecture-content related questions should be directed to Dr. Low. Lab and assignment questions should be directed to Dr. Frail-Gauthier, however, questions about the assignments are best asked on Brightspace discussion boards. Use email only for personal questions/concerns (e.g., absences, extensions). Melanie and **Jen respond to emails** frequently (usually within 24 hours) but can be delayed on emails that come in on evenings and weekends, as work-life balance is important.

Course Description

A thorough overview of the process of evolution. Genetic variation and changes in genetic composition of populations, the relationship between genetic and phenotypic change. Adaptation at various levels of organization (DNA to species), speciation, phylogeny, and macroevolutionary patterns. Introduces the full breadth of evolutionary concepts, preparatory to more advanced courses.

Course Prerequisites:

A grade of C or higher in BIOL 1010.03 or BIOL 1020.03 or BIOL 1031.03 or BIOA 1002.03 and BIOA 1003.03, or SCIE 1506.09 and SCIE 1507.09, or equivalent. **Recommended:** SCIE 1111.03 Writing for the Sciences.

Student Resources

The Evolution Team supports an **open, respectful, and safe** learning environment, for all students. We want you to feel like **you belong** and are welcome in this learning space. We understand that not all disabilities are visible. No matter how you gender identify, what your background is, and who you love -- Everyone Is Welcome Here.

We encourage diversity, equity, accessibility, respect, and inclusion and we will not tolerate hate, harassment, or discrimination.

Need help with course content? In addition to Student Support Hours (listed on page 1), asking questions during the lecture and/or the lab, and posting questions on the Brightspace Discussion Boards, you can get BIOL 2040-specific help via extra resources uploaded to the Brightspace page (e.g., Allele A1 simulator). During the semester, the Dalhousie Association of Biology Students (DABS) has a Concept Room where upper-year students volunteer to provide help with course materials (schedule TBA). Also check out academic support with Studying for Success (including their tutoring program, at https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html).

Need support for YOU? Second-year can be quite demanding, and may be unlike your experience in first year (academically, and personally). There are many resources available to you at Dalhousie, through student health and wellness, accessibility, and many resource and student centres (e.g., Black Student Advising, Human Rights and Equity). The links for these resources are at the end of this syllabus. Note that Jen is double-certified in mental health first aid and is a safe space ally in the Biology Department (<https://www.dal.ca/faculty/science/biology/safe-space.html>). You can ALWAYS reach out to Jen - no concern is too trivial.

Course Structure

Course Delivery

All lectures, labs, and tests will be delivered in person (face to face). Although there are no longer public health protocols, the one big thing we've learned during the pandemic is that if you are experiencing symptoms of COVID-19 or flu, please stay home. To accommodate any students who may need to miss class due to illness, we highly recommend reaching out to your fellow classmates for additional notes (lecture slides will be posted to Brightspace the evening before each class).

If you need to stay home in a **lab time**, please contact Jen to see your available accommodations.

Lectures

Tuesdays and Thursdays, 11:35 AM – 12:55 PM, Sir James DUNN Building, Rm 117

Laboratories

2 hours per week, LSC Room 4012. Labs occur the following days and times:

B01	Tuesday	1735-1925	B03	Wednesday	1235-1425	B05	Thursday	935-1125
B02	Tuesday	1435-1625	B04	Wednesday	1535-1725	B06	Thursday	1535-1725

Course Materials

NOTE: We understand that textbooks are expensive. Although lectures follow the *Evolutionary Analysis* textbook, it is **NOT REQUIRED**. There are copies of the textbooks for you to borrow for a short period of time on reserve in the Killam Library. Jen will also have copies available in the lab (in-lab use only – no signing out).

- 1) Herron J, Freeman S. 2014. *Evolutionary Analysis*. 5th ed. Glenview (IL): Pearson Education. 850 p. **NOTE: This can be rented (reduced price compared to hardcover book) through the Brightspace page (through Willo)**
- 2) Knisely, K. 2021. *A Student Handbook for Writing in Biology*. 6th ed. Sunderland (MA): Sinauer Associates. 288 p. (NOTE; this is also recommended for other Biology courses; 5ed is fine to use, too!).
- 3) **Electronic** (Brightspace): Here we will post the lecture slides and videos, along with the lab activities, pre-lab materials, and assignments. It is recommended that you bring your laptop to the labs!

4) A device that can access the internet in lab (your laptop or your phone) to be able to participate in the weekly pre-lab Kahoot quizzes (the Kahoot app is not required) and Poll Everywhere in lecture.

Lab coats are **not** required for BIOL 2040 labs. It is recommended you wear closed-toes shoes to labs (not because of any chemicals, but because the chair wheels love to stub toes – Jen loves Crocs!).

Assessment

The marks will be assigned as follows:

Assessment	Value	Date
Midterm	25 %	in class Thursday October 17 (80-min max)
Labs	40 %	throughout the term; see schedule for due dates (3% <i>Evolution Reflection</i> ; 15% <i>Fly Lab</i> ; 22*% <i>Lab Assignments</i>)
Final Exam	35 %	3 hours, during final exam period (cumulative, but weighted more to post-midterm)

Other course requirements

There are **no** pre-lab quizzes or pre-lab assignments. The Kahoot quizzes in lab are for practicing concepts/reviewing lecture information, as well as for addressing some FAQs and common issues with that day's lab and the accompanying assignment.

***Content Labs 2 through 6** are all equally weighted to 4.4%, however, we will adjust the lowest-lab 2-through-6 grade to be only 1%, and re-weight it to the rest (5.25% each) at the end of the semester. This way, you won't be "punished" if you do poorly on one of the lab assignments!

When you submit assignments, please follow the Assignment Guidelines document for that lab, use the Template Document to fill out your questions, and look at the Rubric on Brightspace to see where your points designations will be for that assignment. For example, if a question is worth 5 pts out of 20, chances are, more than 1 sentence is needed! Please use critical thinking to make sure you have addressed the questions concisely and completely in your answers.

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

The midterm exam will be held in-person during the lecture time Thursday, October 17. If you cannot write the midterm at the scheduled date, you must notify Professor Low **BEFORE** the time of the midterm exam and clearly explain your absence. Doctor's notes and SDA's are **not required** for BIOL 2040. Permission to write a makeup midterm exam is at the discretion of the professor. If no makeup midterm is permitted, the final will be weighted to 60%.

The final exam will be held during the formal exam period scheduled by the registrar. Students are expected to be available throughout the final exam period. If you cannot write the final exam at the scheduled date, you must notify Professor Low **on or before the day of the exam** and be prepared to provide official documentation that clearly explains your absence within three (3) calendar days. Again, Doctor's notes and SDA's are **not required**. You can look at the exam schedule and/or policies about final exams at dal.ca/exams.

Laboratory attendance is mandatory. An unexcused lab absence means you may receive a deduction on the following assignment submission. An unexcused fly-transfer lab absence will result in a deduction on the final parts of the fly report. Accommodations will be made for students who need to miss an in-person lab due to illness or extenuating circumstances.

If you must miss a lab due to illness, religious observance, sports event, family emergency (etc.):

- Contact Jen prior to your regular laboratory time.
- Check the lab schedule and plan to attend another lab time that week (unless excused by Jen).
- You are still responsible for the lab assignment submission at the usual time.
- In fairness for all students in the course - a busy academic workload is not a valid excuse for an assignment extension for individual students (but see below for Freebie Extensions).

Freebie Assignments Extensions

EVERYONE gets 2 "life happens" extensions to use at your discretion - you do NOT need to email Jen and ask to use one, and you will not receive any late deductions! We will keep track of your freebie redemptions. All late assignments must be submitted by the following Sunday night, as the Demonstrators will grade/publish feedback the next week.

Some Lab and Assignment FAQs!

When are the lab assignments due?

Before the start of your regular lab time. Check the schedule for due dates. We do NOT use Student Declarations of Absences in BIOL 2040 – you must contact Jen. Because the due date is different for each lab, there are no calendar reminders of deadlines on Brightspace – it is your responsibility to know that lab assignments are due before your scheduled lab.

Should I use a template for the assignments?

Yes. There will be a word document template posted on the course Brightspace site under the LABS content folder. It will include the questions and any tables, so all you need to do is fill in your answers, properly format, save your file and submit the completed assignment (as a pdf) to the appropriate Dropbox on Brightspace.

In what type of file should lab assignments be submitted?

Save the template with your completed answers **as a pdf** for submission to Brightspace. We have found that this works best. If you use another format you may be asked to resubmit your assignment before grades are recorded. Make sure you do not submit as a .pages document, as it is unreadable on PCs.

How do I know if my assignment was submitted correctly?

Check that you get a confirmation email from Brightspace *and* check your submitted file before assuming your assignment was submitted correctly. You can submit multiple copies, but only the most recent version will be graded.

Can I still hand in an assignment after the due date and time?

Yes, late assignments will be accepted but there are consequences. **Remember, you have two freebie extensions** until the following Sunday night. After the two freebies, there is a penalty of **10% per day** including weekends. Before midnight the same day it was due is - 5%. Be mindful that, although Jen is understanding for if you need assignment extensions, you have assignments most weeks, and it's an important time management skill to not fall too far behind, in all your courses. We aim to complete grading before the following week's lab, hence why late assignments must be submitted by Sunday night.

I have most of my assignment finished but just have one question left. Can I submit what I have completed and just incur a late deduction on the late section?

No, late deductions are based on the total value of the assignment. You may want to compare the points value of the uncompleted question(s) and the value of the late deduction when choosing what to do.

Can I e-mail my assignment for grading?

No. Submit the assignment to the course Brightspace site, as follow a detailed grading rubric on the assignment (which is where you will receive feedback). **If you are having computer issues**, you can email the assignment to Jen to show that you completed it on time, but you will need to upload it to Brightspace as soon as you are able.

 **Can I skip a fly transfer lab?**

No. Attendance is mandatory at all labs *including* transfer labs at your scheduled lab time. An **unexcused** absence in a transfer lab will result in a 10% deduction off your final fly report, and **unexcused** absences in normal labs will result in a deduction on the submitted assignment.

**Course Policies related to Academic Integrity (IMPORTANT!!)**

*Do NOT COPY or SHARE answers to any questions submitted for marks. Unfortunately, Academic Integrity Offenses happen often. We understand that the process of Academic Integrity is a learning curve, and hopefully we can help practice integral, honest work. The Turnitin software used in BIOL 2040 is good at detecting similarities– even paraphrasing! Therefore, your answers and **ideas** must be your own. Submitting your own work also includes your own critical thinking, analysis, and synthesis of ideas. This is an important skill learned, developed, and practiced throughout your academic journey 😊*

Therefore, Large Language Models and AI (e.g., ChatGPT) are not permitted. The quality of writing coming from LLMs often is MUCH less than you'd expect. Jen will talk about this in lab!

Honesty in BIOL 2040 Evolution and at Dalhousie University is highly valued. It is expected that students submit their own intellectual work to be assessed.



Thinking of using StuDocu, Course Hero or any other similar site?

Think again!



You should know that the administrators of these sites cooperate with faculty at universities, providing names and information on students who post assignments or look up previous assignments. If you download/use a previously-submitted assignment, and if that assignment is submitted through Turnitin, the software does a REALLY good job with finding similarities and matching it to previously-uploaded documents.

The penalty? This depends on the severity of the offense and whether it's your first offense or not. If there is evidence for a case to go forward to the Academic Integrity Office, you will be contacted by email explaining the offense, and asked to have a meeting with an Academic Integrity Officer and the course instructor. If found guilty of an academic offense, penalties may include things like, a zero for the assignment (or parts of it), requiring taking an academic integrity module from the Writing Centre, and possibly (if it isn't first offense), a notation on your transcript.

Some Academic Integrity FAQs!

Since we work in groups, can we hand in the same assignments?

No. You are encouraged to collaborate on data collection or broad general concepts with fellow students especially during the lab time. However, you must produce **independent reports** written in **your own words** that are submitted for grading.

Another student asks to see what I have written on an assignment. Should I give them my assignment to look at?

Absolutely not. If that student intentionally or unintentionally copies your work, your name will go to the Academic Integrity Officer for the Faculty of Science and you can be found guilty of an academic offence. You may receive the same consequences as the person who copied your work.

The better option - give some general ideas on how to answer a question or send them along to the Demonstrators or Jen in the lab, attend Jen's weekly Student Hours, or (most importantly!) ask lots of questions in the associated Brightspace discussion board!

If, after I have completed this course, a student asks to use my assignments should I pass them along?

No. If that student copies your work and submits it as their own, your name also goes to the Academic Integrity Officer with a charge of an academic offense. You can be found guilty and face the same consequences as the person who copied your work. (This has happened recently!)

What if someone obtains my assignments and uses them?

You are responsible for keeping your work safe.

What is Turnitin?

This is a software program that Dalhousie University has adopted to detect for originality of written work. Be very careful with your answers on assignments. Some assignments will be submitted into Turnitin when you submit them on Brightspace.

Learning Objectives

What is expected of students coming into the course, and course student learning outcomes, can be found at this link:

<https://biology.academics.cs.dal.ca/daedalus/manage/course/BIOL/2040>

See lecture and lab schedule on the next page!

Tentative Course Content and Schedule (with tests and assignments)

Dates	Lecture	Relevant Chapter(s)	Assignment Due before your lab time	Laboratory
Sept. 3 - 6	L1: Intro/What is Evolution? L2: History + Evidence for Evolution	Ch. 1 Ch. 2	--	<i>No labs this week</i>
Sept. 9 - 13	L3: Natural Selection L4: Understanding Phylogeny	Ch. 3 Ch. 4	--	Evolution Intro Lab! Lab 1(a): Fly Lab Practice
Sept. 16 - 20	L5: Inferring Phylogeny L6: Genetic Variation	Ch. 4 Ch. 5	Fly Lab: Materials & Methods (2.5%)	Lab 2: The Phylogeny Lab
Tuesday Sept. 17: add/drop date				
Sept. 23 - 27	L7: Population Genetics P1 L8: Population Genetics P2	Ch. 6	Phylogeny Assignment (4.4%)	Lab 1(b): F0 Fly Cultures set-up
Monday Sept. 30: Truth and Reconciliation Day; Oct. 2: last day to drop fall term courses w/o a "W"				
Oct. 1 - 4	L9: Population Genetics P3 L10: Population Genetics P4	Ch. 7	Fly Lab: Introduction Assessment (3.5%)	Lab 3: The Marble Lab (Fly lab: remove adults)
Oct. 7 - 11	L11: Linkage and Sex L12: Quantitative Genetics	Ch. 8 Ch. 9	Marble Assignment (4.4%)	Fly Lab: 1 st Transfer (F1)
Oct. 15 - 18	L13: Midterm Review L14: MIDTERM EXAM	--	<i>No assignments due!</i>	Lab 4: DNA Sequences Lab (Fly lab: remove adults)
Oct. 21 - 25	L15: Studying Adaptation L16: Speciation	Ch. 10 Ch. 16	DNA Sequences Assignment (4.4%)	Fly Lab: 2 nd Transfer (F2)
Oct. 28 - Nov. 1	L17: Origins of Life L18: Extinction	Ch. 17 Ch. 18	<i>No assignments due!</i>	Lab 5: Beetle Lab (Fly lab: remove adults)
Thursday Oct. 31: last day to drop fall term courses with a "W"				
Nov. 4 - 8	L19: Sexual Selection P1 L20: Sexual Selection P2	Ch. 11 Ch. 11	Beetle Lab Assignment (4.4%)	Fly Lab: F3 Final Counts and record data
Nov. 11 - 15	Fall Study Break - no classes	--	Any time BEFORE the end of Study Break - Evolution-in-the-News/ Evolution-Hot-Topic Reflection (3%)	No labs
Nov. 18 - 22	L21: Evolution of Sociality L22: Human Evolution	Ch. 12 Ch. 20	No assignments due! <i>HIGHLY recommend working on fly lab!!</i>	Lab 6: Duck Lab
Nov. 25 - 29	L23: Topic TBD L24: Final Exam Review	--	Duck Lab Assignment (4.4%) Finish fly lab!	No labs!
Dec 3 - 4	<i>No lectures (Monday classes held)</i>	--	Fly Lab: Abstract, Results, Discussion (9%) due for everyone Dec. 4th	
Dec. 6 - 17 Dalhousie University Examinations				

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.

Faculty of Science

Student Resources and Support

University Policies and Programs

Important Dates in the Academic Year (including add/drop dates):

http://www.dal.ca/academics/important_dates.html

Classroom Recording Protocol:

https://www.dal.ca/dept/university_secretariat/policies/academic/classroom-recording-protocol.html

Dalhousie Grading Practices Policies:

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Grade Appeal Process: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

Sexualized Violence Policy:

https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

Learning and Support Resources

General Academic Support – Advising (Halifax):

https://www.dal.ca/campus_life/academic-support/advising.html

General Academic Support – Advising (Truro): <https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising.html>

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness.html

On Track (helps you transition into university, and supports you through your first year at Dalhousie and beyond): https://www.dal.ca/campus_life/academic-support/On-track.html

Indigenous Student Centre:

https://www.dal.ca/campus_life/communities/indigenous.html

Indigenous Connection: <https://www.dal.ca/about-dal/indigenous-connection.html>

Elders-in-Residence (The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit the office in the Indigenous Student Centre or contact the program at elders@dal.ca or 902-494-6803:

<https://cdn.dal.ca/content/dam/dalhousie/pdf/academics/UG/indigenous-studies/Elder-Protocol-July2018.pdf>

Black Student Advising Centre:

https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre.html

LGBTQ2SIA+ Collaborative:

<https://www.dal.ca/dept/vpei/edia/education/community-specific-spaces/LGBTQ2SIA-collaborative.html>

Dalhousie Libraries: <http://libraries.dal.ca/>

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Dalhousie Student Advocacy Services:

<https://www.dsu.ca/dsas?rq=student%20advocacy>

Dalhousie Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Human Rights and Equity Services: <https://www.dal.ca/dept/hres.html>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Faculty of Science Advising Support: <https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html>

Safety

Biosafety: <http://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <http://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Laser Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety/laser-safety.html>