BIOL 1020
Introductory Biology I: Cells, Genetics, and Evolution
Summer 2020

Welcome to the Course!

BIOL 1020 introduces you to the language, concepts and practice of biology. This course deals with structures and processes that are common to all organisms, from ancient types of bacteria to humans and seed-bearing plants. Topics include cell structure and function, energy production, cell division, mitosis and meiosis, Mendelian genetics, chromosomes and heredity, DNA structure and replication, transcription and translation, DNA technology, evolution, systematics and phylogeny, and origins of prokaryotic and eukaryotic diversity. The course is appropriate for students planning to major in biology and marine biology, in which case BIOL 1021 (or BIOL 1011) should also be taken. It is also appropriate for non-majors wishing to gain an understanding of the science underlying topical issues such as cloning, genetic engineering, cancer, and AIDS.

Prerequisites. Although high school chemistry and biology are recommended, there are no prerequisites for this course, nor is this course a prerequisite for BIOL 1021 (online) or BIOL 1011 (face-to-face).

Getting Started. The course is available on the first day of term; all you need to get started is an activated NetID. The first lesson is an Orientation, which presents a tour of the course structure and gives you the opportunity to try out Brightspace's tools. For the technical requirements related to the course, please visit the BIOL 1020/21 public information site.

Syllabus Contents

Instructor:
Jennifer Van Dommelen

E-mail: biol1020@dal.ca

Lectures: recorded lectures posted in Brightspace

Laboratories: conducted online / at home (six labs in total)

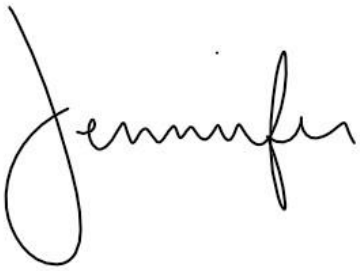
Office Hours:
drop-in or by appointment via Collaborate Ultra in Brightspace; non-mandatory, drop-in schedule TBA

Hello from the Instructor

My name is Jennifer Van Dommelen, and I am a Senior Instructor in the Biology Department. I am the primary instructor in BIOL 1020 and BIOL 1021, and I also do development and supervisory work in the teaching labs for our face-to-face courses, BIOL 1010 and BIOL 1011. I am an undergraduate advisor in the Department of Biology and I work with Dalhousie's Centre for Learning and Teaching on a number of projects related to e-learning.

I am interested in the roles of cognitive science and research evidence in teaching and learning; in addition to my teaching and service work I'm currently working on a Master of Science in Education through the University of Southampton. (I'm an online student too!)

There is also a number of Teaching Assistants (TAs) who work with me here in BIOL 1020 and you will be meeting them shortly after the term begins. We're looking forward to working and learning with you!



Staying in Touch

The best way to reach me is via e-mail, at **biol1020@dal.ca.** During the regular work week (Monday-Friday) I typically respond to e-mails within 24 hours. On weekends I monitor e-mail as my schedule permits, but I may not reply until Monday. If I need to reach you, I will use your Dalhousie e-mail address.

I can also meet with you in real time for audio or video conversation via Collaborate Ultra, our web conferencing tool – just send me an e-mail to arrange a time!

Learning Outcomes

The learning outcomes for the course are listed below; in addition, each lesson on the course website includes a detailed set of learning objectives related to the specific topics of the lesson.

Upon the successful completion of this course, you will have had the opportunity to explore skills and concepts related to all the course objectives, and you will have a solid foundation for pursuing upper-level studies in biology.

You may also want to consider your own personal learning objectives, whether they are specific to this course or more general. What do you expect to learn in an introductory biology course? What would you *like* to learn in an introductory biology course? What are your general learning and academic goals?

Learning Outcomes for Unit I: Cell Biology

- Describe the structure and function of the organelles found in eukaryotic cells, demonstrating an appreciation for the overall architecture of the cell.
- Give examples of how proteins may be post-translationally modified and targeted to correct destinations.
- Describe the process by which carbohydrates, lipids and proteins are assembled from monomers; identify their functional roles in the eukaryotic cell.
- Describe the basic chemical structure of deoxyribonucleic acid (DNA) and how it differs from that of ribonucleic acid (RNA).
- Identify the components of biological membranes, including the various types of membrane proteins.
- Explain the fluid mosaic model and describe how membranes exhibit selective permeability.
- Understand the role of ATP as the energy currency in the cell and appreciate its importance for driving cellular work.
- List the key products and features of glycolysis, the citric acid cycle, and oxidative phosphorylation and understand the flow of energy through the entire process.
- Understand the mechanism by which a signal is transmitted into the cell via G protein coupled receptors and tyrosine kinase receptors.
- List several examples of second messengers and describe how each is involved in signal transduction pathways.
- Recall the steps relating to cell division, understanding what cellular processes happen at each step, and describe the control mechanisms for the process.

Learning Outcomes for Unit II: Genetics and Molecular Biology

- Compare and contrast the fundamental features of mitosis and meiosis with emphasis on the movement of homologous chromosomes during these cellular reproductive processes.
- Define Mendel's two laws of heredity that explain the transmission of traits from one generation to the next and provide selected examples of transmission of traits that deviate from these laws.
- Analyze human pedigrees to determine if a trait is dominant or recessive, whether the gene(s) associated with the trait is located on an autosome or sex chromosome, and if the trait is likely associated with a single gene or more than one gene.
- Describe the role that DNA and RNA play in the transfer of information from genotype (DNA) to phenotype (protein) and the deciphering of the genetic code.
- Identify the regulatory elements and how they function in the control of gene expression of inducible and repressible operons in prokaryotes.
- Define the classes of physical and chemical mutagens and their effect on the coded amino acids in a polypeptide, and the resulting phenotype.
- Understand the basic principles of DNA technology/biotechnology, its applications and the ethical and societal implications of this technological revolution.
- Understand some of the ways that bioinformatics data is collected, stored, and used to investigate scientific questions.

Learning Outcomes for Unit III: Evolution

- Describe the basic tenets of 'Darwinian evolution': i) the Tree of Life concept, and ii) natural selection (including different modes of selection) leading to adaptive evolution
- Articulate the concept of homology, and how biogeography and transitional fossils provide evidence of evolution.
- Use the Hardy-Weinberg principle to calculate equilibrium genotype and allele frequencies (one locus, two alleles) in a population.
- Define gene flow, genetic drift, and founder effect, and explain how they influence allele frequencies in populations.
- Explain the 'biological species concept' and distinguish between and give examples of i) pre- and post-zygotic reproductive barriers, and ii) allopatric and sympatric speciation.
- Interpret the information in simple phylogenetic trees and taxonomies; distinguish between monophyly, paraphyly and polyphyly.
- Demonstrate an understanding of molecular phylogenetics, including the concept of tracing the evolutionary history of genes (e.g. gene duplication, horizontal gene transfer).
- Describe the most general attributes of the fossil record, including mass extinctions (with examples) and adaptive radiations.
- Describe basic concepts that explain evolution of complex features (e.g. evolution of developmental regulation, concept of exaptation).
- Describe the most basic similarities and differences between Bacteria, Archaea and Eukaryotes, and the evolutionary relationships between protists and animals, plants, and fungi.
- Describe the phenomenon of primary endosymbiosis and its role in the origins of mitochondria and plastids; compare with the concept of secondary endosymbiosis.

Learning Outcomes for Labs

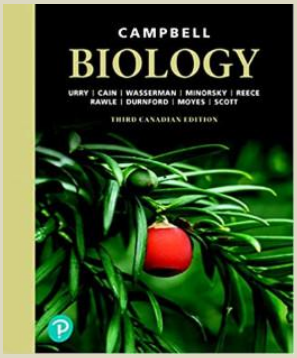
- Work with scientific questions, propose hypotheses as tentative answers to those questions, and generate observable predictions consistent with a hypothesis in the context of a particular experiment.
- Collect both quantitative and qualitative data through careful observations, report data using written descriptions, graphs, tables, and sketches, and interpret data to assess hypotheses and generate conclusions.
- Know when to make use of common biological research tools such as compound microscopes, gel electrophoresis units, and bioinformatics tools.
- Construct a phylogenetic tree using shared characters and parsimony and interpret it as a visual hypothesis about relatedness; use the tree to generate testable predictions.
- Analyze data using statistical techniques (mean, standard deviation, n, chi-square test).

Lesson Topics, Textbook, and Readings

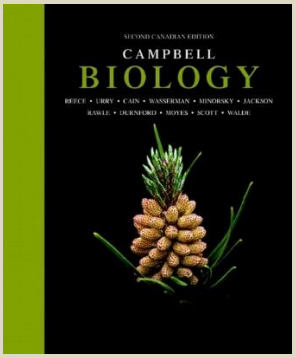
The required textbook for this course is any recent edition from the *Campbell Biology* series, including Canadian editions 1-3 and US editions 9-13. This is the same book that is used in BIOL 1010 and BIOL 1011 (the face-to-face courses). The e-text version of the 2nd Canadian edition is available at the Dalhousie Bookstore. You may also be able to locate hard copies of the textbook (any edition) at other retailers.

The chapters listed below apply to any of the editions of the textbook. Detailed learning objectives that will help you focus on the most relevant material from the chapter are provided in the course website.

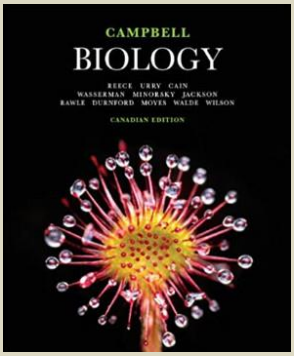
Lessson Number and Topic	Chapter(s)
Lesson 1: Orientation	n/a
Unit I: Cell Biology	
Lesson 2: Large Biological Molecules	5
Lesson 3: Cell Structure and Membranes	6 and 7
Lesson 4: Energy and Metabolism	8 and 9
Lesson 5: Cell Communication and the Cell Cycle	11 and 12
Unit II: Genetics and Molecular Biology	
Lesson 6: Patterns of Inheritance	13 and 14
Lesson 7: Biological Basis of Inheritance	15 and 16
Lesson 8: Molecular Biology of the Gene	17 and 18
Lesson 9: Biotechnology and Bioinformatics	20 and 21
Unit III: Evolution	
Lesson 10: Descent With Modification and Evolution of Populations	22 and 23
Lesson 11: The Origin of Species and Macroevolution	24 and 25
Lesson 12: Phylogeny, Systematics, and Microbial Diversity	26, 27, and 28



3rd Canadian edition



2nd Canadian edition



1st Canadian edition

Depending on where you buy your book and whether you buy a new or used copy, your purchase may also include supplements such as print study guides or access codes to electronic media such as an e-book or MasteringBiology® (or they may be available for purchase separately). These supplements are ***not*** required, but you are welcome to use them.

Course Schedule

This page presents an overview; a complete course schedule containing all fixed due dates and deadlines for the course is provided as a separate document on Brightspace. A combined schedule with dates relevant to both BIOL 1020 and BIOL 1021 is also available, for the convenience of students who are taking both courses concurrently.

Lessons. Lessons typically run from Monday-Sunday. Unless otherwise indicated, all lesson content is available at all times and you are free to review it whenever you like.

Graded Quizzes. Due most Wednesdays at **11:30 pm Atlantic** time.

Extra Practice Quizzes. Available shortly after the deadline for a graded quiz has passed, until the end of the course. Extra Practice Quizzes are optional, and there is no deadline for submission.

Labs. Due on alternate Mondays at **11:30 pm Atlantic** time.

Exams. There is one exam at the end of each unit of the course, during the week following the last lesson of the unit.

For more information about these and other course components, see the **Learning Activities** section of this syllabus.

Pro Tip: Timing and Deadlines

If you are not located in the Atlantic time zone, use this Time Zone Converter to determine deadlines in your local time. Make note of them on the full schedule!

Graded quizzes and labs are due at the same time in BIOL 1020 and BIOL 1021. If you are taking both courses concurrently, please plan your time so that you can submit your work for both courses by the posted deadlines.

Course Schedule Summary for Summer 2020

Lessons: Monday to Sunday; Orientation begins June 4th (12 lessons in total including the Orientation)
Graded Quizzes: due most Wednesdays at 11:30 pm, starting June 17th
Labs: due alternate Mondays at 11:30 pm, starting June 22nd
Exam I: July 9th (Unit I); availability details To Be Announced
Exam II: August 6th (Unit II); availability details To Be Announced
Exam III: August 27th (Unit III plus labs); availability details To Be Announced
Lectures: n/a (recordings posted online)

Learning Activities

There are a variety of learning activities in the course, some of which you will participate in every week and others only occasionally.

Readings and Lectures

BIOL 1020 is a 'flipped course' in the sense that unlike some of your face-to-face courses, the lectures are *not* intended to be the primary mode by which you learn the material. In BIOL 1020, readings are supported by the lectures, rather than the other way around. The goal of the lecture series is to highlight the thematic connections among the topics of the course as well as to give greater attention to topics and concepts that students traditionally find difficult.

Pro Tip: Lectures

Lectures in BIOL 1020 do not explicitly address all the learning objectives of the course and are not mandatory to view. You can meet all the learning objectives of a lesson by doing the readings and other required activities. But you *can't* meet all the learning objectives of a lesson by *only* watching the lecture!

Quizzes

Graded Quizzes. Each lesson includes an online quiz. The questions are randomly selected from a testbank; each quiz and each attempt is unique. Quizzes are automatically graded, and you will see your score immediately upon submitting the quiz. You will get two attempts at each (graded) quiz, and the higher score will count toward your final grade. Each lesson quiz includes questions from each of the three previous lessons to help you recall material that came previously.

Extra Practice Quizzes. In addition to the graded quizzes (i.e., those quizzes that count toward your final grade), there are Extra Practice Quizzes. These are nearly identical to the graded quizzes, but you get unlimited attempts at them, and your scores do not count toward your final grade. Extra Practice Quizzes are available automatically shortly after the deadline for a graded quiz passes, with the exception of the Extra Practice Quizzes for Lessons 5, 9, and 12, which are released at the same time as those for Lessons 4, 8, and 11, respectively (so that you have more time to use them to prepare for the exams).

Pro Tip: Learning and Memory

Quizzes are a form of **retrieval practice** – activities that help you learn by pulling information out of your brain, rather than by cramming it in!

Discussion Board Participation

Each week, a small number of students will be assigned to post to the Discussion Board, to start a thread related to the course learning objectives. Posts will be graded according to a rubric. In addition, all content-related posts made to the Discussion Board at any time by anyone are eligible for bonus marks. For full details, see the **Discussion Board Participation** module in the Table of Contents of the course site.

Pro Tip: Discussions

The Bonus Discussions are your opportunity to earn extra credit – a lab's worth! – in the course. The catch is that you have to post by a deadline: once the Unit is over, you can't earn the bonus for that Unit.

Lab Assignments

Labs vary in style from problem solving to online investigations and activities that will take you away from the computer. Detailed information about each lab is provided in the **Labs** module in the Table of Contents of the course site.

FAQ: Labs

Labs are a required component of the course, even if you are repeating it or have taken BIOL 1010. Your lab marks from BIOL 1010 do not transfer to BIOL 1020 (or vice versa).

Exams

Exams are learning activities too! There is one exam per Unit of the course, consisting of multiple-choice and short-answer questions. Exams are written online, in Brightspace. We're trying a couple of new things with exams for the Summer 2020 term, so watch for announcements from the instructor with further details!

Synchronous Tutorials / Office Hours

New for Summer 2020! We'll be offering real-time sessions via Collaborate Ultra, located in Brightspace. Schedule and exact format To Be Announced, but these sessions will be focused on support and accountability rather than lecturing. We can also use Collaborate Ultra for private meetings by appointment.

Grading Scheme

Your final mark in this course is based on several components and there is considerable flexibility in the marking scheme.

Assessment	Marks	Details
Quizzes	5	eleven quizzes at 0.5 marks each; lowest mark dropped
Labs	18	six labs at 3 marks each; one mulligan permitted (see below)
Exam I	25	Unit I; multiple-choice and short answer; 120 minutes; available for 12 hours; local start time TBA
Exam II	25	Unit II; multiple-choice and short answer; 120 minutes; available for 12 hours; local start time TBA
Exam III	25	Unit III and labs; multiple-choice and short answer; 120 minutes; available for 12 hours; local start time TBA
Discussion Board Participation (Required)	2	each student is required to post to the Discussion Board once during the term
Discussion Board Participation (Bonus)	3	bonus marks are awarded at the end of each unit for qualifying Discussion Board posts
Total	**100 + 3**	

Final Grade Conversion

We use the Dalhousie Common Grade Scale; i.e.:

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

Pro Tip: Mulligan Day

On or near the last day of the term (see the schedule for the exact date); Mulligan Day is your chance to submit any ONE lab that you have not already submitted for grading. If you miss a lab during the term for any reason, you can submit it on Mulligan Day with no questions asked!

Policies and Expectations

The instructor and teaching assistants in this course are here to support your learning and help you in any way we can. You can expect us to respond to private messages within 24 hours during the week (Monday-Friday), and return your labs to you within one week of submission. We may not necessarily respond to posts on the Discussion Board within 24 hours -- depending on the thread, we may wait a little longer to give as many students as possible a chance to respond and participate.

You can also expect regular general feedback and interaction from us in the form of announcements, office hours, and web conferences, which can be scheduled upon request at mutually convenient times.

Participation

For your part, it's important to maintain consistent, regular effort in the course or it can quickly become overwhelming. You should plan to check in frequently and submit work on a weekly basis.

Each week you can plan to spend:

- 1-2 hours reading online content
- 3-5 hours on textbook readings
- 2-4 hours preparing assignments
- 1-2 hours on graded quizzes (quiz submission, not preparation)
- time reading and responding to discussion posts (variable)
- time viewing recorded lectures (variable)
- time on Extra Practice Quizzes (variable)

In other words, schedule 7-13 hours per week for this course, which is the same amount of time that you are expected to spend on a comparable face-to-face course, including lectures, labs, and independent study time. Some weeks you'll be at the lower end of the range, some weeks you may go over. It depends on your background experience, working style, and how well you take to the material.

Pro Tip: Planning Your Effort

Taking a course online is not necessarily easier or faster than taking it in a regular classroom. It could take as much or more time than a face-to-face course; the convenience is that you don't have to come to campus to attend class/lab at a set time every week.

Think of it as a work-at-your-own *place* (rather than a work-at-your-own-pace) course.

Absences and Late Work

It is better to maintain your momentum and progress in the course than to get bogged down by minor setbacks. Instead of offering extensions, we have 'buffers' in place to help you recover marks lost due to missed submissions:

- Your lowest quiz mark is dropped from the final grade calculation, so missing one of these will not affect your final grade. If you miss more quizzes, the marks lost are small and you still have access to the Extra Practice Quizzes to help you prepare for the exams.
- You can take advantage of Mulligan Day if you miss a lab assignment.
- You can earn bonus marks on the Discussion Board.

Dropping the Course

We hate to see you go, but if you decide that you want to drop the course, you must do so via DalOnline. Failure to participate does not constitute withdrawal from the course, and failure to withdraw can cause problems with your transcript and bank account! If you remain registered in the course, even if you don't participate, you will receive a final grade of 'INC' (for 'incomplete'), which will affect your GPA and require a waiver to reverse. If you drop the course via DalOnline by the relevant deadlines, you are eligible for a partial tuition refund.

Pro Tip: Tech Support

Stable high-speed internet access, updated software, and common-sense measures such as a back-up plan for your files and access to an alternate device in case of emergency will go a long way toward preventing most technical problems in this course. Brightspace is a robust platform that works well on most devices and rarely experiences downtime.

If you run into technical problems, let us know as soon as possible – we can help!

biol1020@dal.ca

Make-Up Exams and Special Arrangements

While you are expected to make every reasonable effort to write the exams on their scheduled dates, we understand that life gets in the way and can be flexible where necessary. The most important thing to remember is to contact the instructor at **biol1020@dal.ca** as soon as you anticipate a conflict, or as soon as possible after an unexpected event.

Per Section 16.8 of Dalhousie's Academic Regulations (see also University Regulations; Policy for the Scheduling of Courses/Examinations), arrangements for missed exams and other work are made at the instructor's discretion.

Student Declaration of Absence

For short-term absences (3 days or fewer) due as illness, injury, or other professional or academic obligations that conflict with an exam, you should:

(1) contact the instructor as soon as you are aware of the conflict, and
(2) submit a Student Declaration of Absence (SDA), available as an "assignment" in Brightspace, within three days of your absence. No other documentation is required.

SDAs are required for missed exams only; they are *not* required for missed quizzes, labs, or discussions.

If you experience or anticipate a longer-term absence (more than three days), contact the instructor to work out a plan for completing and submitting your work.

Pro Tip: Disclosure

If you need some flexibility with deadlines or other assistance of some kind, please let the instructor know. The sooner you reach out, the more options there are for solutions.

It is *not* necessary, however, to provide documentation (other than the SDA as described at left) or to share any details about your personal situation if you are not comfortable doing so.

Academic Accommodations and Students With Disabilities

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic included in the Nova Scotia Human Rights Act. Students who require academic accommodation for either course participation or the writing of tests, quizzes, and exams should contact the Student Accessibility Centre (Halifax) or the Student Success Centre (Truro) prior to or at the outset of each academic term.

See also Dalhousie University's Student Accommodation Policy.

Academic Integrity and Student Code of Conduct

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty. The Academic Integrity website provides students and faculty with information on plagiarism and other forms of academic dishonesty and has resources to help students succeed honestly. Read the full text of Dalhousie's Policy on Intellectual Honesty and Faculty Discipline Procedures.

Academic Integrity Violations in BIOL 1020/21

While you are free to ask questions and consult your peers while working on assignments in BIOL 1020/21, any work you submit must be your own, and must not have been submitted previously in the course (unless explicit permission to submit previous work has been given). In these courses we have reported cases that involved copied labs, plagiarism, self-plagiarism, use of images without attribution, improper data sharing, possession of prohibited items during exams, and cheating on exams. Penalties have ranged from a mark of zero for copied labs to expulsion from the University for cheating on exams.

Student Code of Conduct

Dalhousie University has a Code of Student Conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general: "The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect

- The integrity and proper functioning of the academic and non-academic programs and activities of the University or its faculties, schools, or departments;
- the peaceful and safe enjoyment of University facilities by other members of the University and the public;
- the freedom of members of the University to participate reasonably in the programs of the University and in activities on the University's premises;
- the property of the University or its members

Pro Tip: Cheating is Costly (and there's no reason to do it)

If you are ever tempted to cheat on your work for the sake of making a deadline or achieving a higher grade, please just walk away from the assignment. You are far better off accepting the loss of marks than taking the penalty that will apply if you are caught. ***It is simply not worth the risk.***

Your instructors want you to succeed on merit and will bend over backwards to help you do so – talk to us!

Students enrolled in 1000-level courses (including this one) may be invited to complete an online Academic Integrity Module, offered through the Writing Centre. The Academic Integrity Module is a separate "course" on your Brightspace course list.

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate. (Some of these policies are elaborated upon elsewhere in this syllabus.)

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of 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.
Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia). **Information**: https://www.dal.ca/campus_life/academic-support/accessibility.html

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.
Statement: http://www.dal.ca/cultureofrespect.html

Important Dates in the Academic Year (including add/drop dates)
https://www.dal.ca/academics/important_dates.html

Missed or Late Academic Requirements due to Student Absence

Dalhousie students are asked to take responsibility for their own short-term absences (3 days or fewer) by contacting their instructor by phone or email prior to the academic requirement deadline or scheduled time and by submitting a completed Student Declaration of Absence to their instructor in case of missed or late academic requirements.
Read more: https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

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 (1321 Edward St., elders@dal.ca).
Information: https://www.dal.ca/campus_life/communities/indigenous.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. **Code**: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

University Grading Practices

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

Learning and Support Resources

Academic Supports

Copyright Office: https://libraries.dal.ca/services/copyright-office.html
E-Learning website http://www.dal.ca/dept/elearning.html
Fair Dealing Guidelines https://libraries.dal.ca/services/copyright-office/fair-dealing.html
Library: https://libraries.dal.ca/
Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html
Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Advising

Aboriginal Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html
Biology Advising: biology.advising@dal.ca
Black Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html
International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html
General Advising, Halifax: https://www.dal.ca/campus_life/academic-support/advising.html
General Advising, Truro: https://www.dal.ca/about-dal/agricultural-campus/student-success-centre/academic-support.html
Science Program Advisors: https://www.dal.ca/faculty/science/current-students/academic-advising.html

Other Supports and Services

Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html
Student Advocacy: dsu.ca/dsas
Student Health and Wellness: https://www.dal.ca/campus_life/health-and-wellness.html

Safety

Biosafety: https://www.dal.ca/dept/safety/programs-services/biosafety.html
Chemical Safety: https://www.dal.ca/dept/safety/programs-services/chemical-safety.html
Radiation Safety: https://www.dal.ca/dept/safety/programs-services/radiation-safety.html
Scent-Free Program: https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html