DALHOUSIE UNIVERSITY

Faculty of Science Course Syllabus
Department of Biology
Biol 2004
Diversity of Plants and Microorganisms
Winter 2018

Instructor(s):

Dr. Alastair Simpson (Microorganisms)

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Office hours: By appointment

Dr. Arunika Gunawardena (Plants)

Arunika.Gunawardena@dal.ca LSC- Biology 6076 B,

Office hours: Tues & Thurs 2:30-3:30 or by appointment

Ms. Lara Gibson (Lab Instructor)

ldgibson@dal.ca LSC- Biology 5089

Office hours: When my door is open, or by appointment

Course Description: Introduces the main domains of plant, fungal and microbial life, based on modern phylogenetic taxonomy. Examines the diversity, structure, physiology and ecology of non – animal life forms. Reviews the origins of the main lineages of living things - Archaea, Eubacteria and Eukaryota, as well as the main groups of eukaryotes

Course Prerequisites: A grade of C+ or higher in BIOL 1010.03 or (BIOL 1020.03, or BIOA 1002.03 or BIOL 1030.03) and BIOL 1011.03 or (BIOL 1021.03, BIOA 1003.03, or BIOL 1031.03); or SCIE 1505.18.

Lectures: Lectures are held in the ROWE Management Building 1028

Tuesday & Thursdays 1:05- 2:25

See schedule below

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Table 1: Schedule of Lecture date, topic and laboratory topic for Winter term 2018. Please note, lecture topics may vary slightly by date but test dates are fixed.

Date	Lecture Topic	Laboratory Topic
Jan 9 Jan 11	Introduction to microorganisms: The prokaryote cell The prokaryote cell continued	No Labs
Jan 16 Jan 18	Metabolic diversity in prokaryotes Bacterial diversity 1	Introduction, Safety, Hands (1), Fungi (1) Microscopes
Jan 23 Jan 25	Bacterial diversity 2 Bacterial diversity 3	Techniques Practice, Staining Spore Stains, Hands (2)
Jan 30 Feb 1	Archaea Introduction to microbial eukaryotes (cells and evolution)	Unknowns
Feb 6 Feb 8	Microbial eukaryotes diversity 1: Mostly microalgae Microbial eukaryotes diversity 2: Mostly protozoa	Fungi (2) Bacteriophage (1)
Feb 13 Feb 15	Fungi Macroalgae	Fungi (3) Bacteriophage (2)
Feb 20 Feb 22	**Study Break: No Class** **Study Break: No Class**	**No Labs**
Feb 27 March 1	Introduction to Plants Bryophytes (i)	Protists, Cyanobacteia, Algae
March 2	** Microorganism Test** Outside of class time: 5:30-7:30	
March 6 March 8	Bryophytes (ii), Seedless vascular plants (i) Seedless vascular plants (ii)	Bryophytes
March 13 March 15	Gymnosperms (i) Gymnospersm (ii)	Seedless Vascular Plants
March 20 March 22	Angiosperms (i) Angiosperms (ii)	Gymnosperms
March 27 March 29	Diversity of flowering plants (i) Diversity of flowering plants (ii)	Angiosperms
April 3 April 5	Primary plant body: roots, leaves, stems The private life of plants/ Program cell death in plants.	Plant Lab Exam

The Microorganism test will be held in LSC C 240 & C 242. There will be an announcement regarding what room you will write in.

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Laboratories: Laboratory sessions occur weekly in rooms 5009 & 5012 of the biology tower. Laboratory sessions **start on January 16th**. You are expected to attend each lab session in your own lab period. If you know you are going to miss a session, please contact Lara Gibson prior to your regular date. The date and time of each lab are as follows:

Table 2: Laboratory sessions for Diversity of Plants and Microorganism by lab section, indicating time and teaching staff.

Lab Section	Room	Day and Time	TA
B01	5009	Monday 2:35 pm- 5:25 pm	Ashar
B02	5012	Monday 2:35 pm- 5:25 pm	Mili
B03	5009	Tuesday 2:35- 5:25 pm	Ann
B04	5012	Tuesday 2:35- 5:25 pm	Nick
B05	5009	Wednesday 2:35 pm- 5:25 pm	Carmen
B06	5012	Wednesday 2:35 pm- 5:25 pm	Raphieal N
B07	5009	Thursday 10:05- 12:55	Raphael M
B08	5012	Thursday 10:05- 12:55	Lara
B09	5009	Thursday 2:35 pm- 5:25 pm	Jacob
B10	5012	Thursday 2:35 pm- 5:25 pm	Andrea

Laboratory session are held weekly for 11 weeks of the term on the following dates: 1) January 15-19, 2) January 22-26, 3) January 29- February 2, 4) February 5-9, 5) February 12-16, 6) February 26- March 2, 7) March 5– 9, 8) March 12- 16, 9) March 19- 23, 10) March 26 – 30, 11) April 2- 6 (Plant Lab Exam).

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Course Objectives/Learning Outcomes

The biology department has created a curriculum map of the courses it offers. If you are interested in seeing the map, you can find it at: https://biology.academics.cs.dal.ca/

On that page if you click on the courses link, you will come to a list of all the courses offered by the biology department. Clicking on any of the individual classes, leads to a class page, with a map for the class, illustrating what classes are needed to take the class and what subsequent classes require the class of interest.

Below the map, you'll find a list of assumed learning outcomes, these are the skills and topics a student is expected to know at the start of the class. Following this list is a second list of student learning outcomes, these are the topics and skills a student is expected to learn during the class of interest.

The assumed learning outcomes, the list of skills and topics we expect you to be familiar with at the start of Biology 2004, include:

- Compare and contrast the fundamental features of mitosis and meiosis with emphasis on the movement of homologous chromosomes during these cellular reproductive processes.
- Create scientific questions, propose a written hypothesis as a tentative answer to that question and generate observable predictions consistent with that hypothesis in the context of a particular experiment.
- Demonstrate an understanding of molecular phylogenetics, including the concept of tracing the evolution history of genes (e.g. gene duplication, horizontal gene transfer).
- Describe the basic structure and function of organelles.
- Describe the components of photosynthesis and the main steps and products of each component.
- 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 (chloroplasts).
- Know basic features of the major groups of fungi, including structure, growth and life cycles
- Know the life cycles of major plant groups.
- Observe diversity of form, as well as key shared structures, across a range of cell and organism types.
- Recall basic chemical concepts: bonding, formulas, concentration, the principle of balancing chemical equations, radiometric dating/radioactive decay.
- Recall basic mathematical concepts and techniques: logarithms, exponentials, solving simple algebraic equations, slopes and intercepts, graphing and interpreting simple graphs
- Understand the features that allowed transition from aquatic to terrestrial environments.
- Use and know when to make use of common biological research tools such as compound microscopes, gel electrophoresis units, pipettors and micropipettors, bioinformatics tools, and enzyme assays.
- Describe the basic structure and function of biological membranes.
- Describe the different macromolecules.
- Describe the major plant cell, tissue and organ types.
- Recall how cells produce and utilize ATP.

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The student learning outcomes, the list of skills and topics we expect you to learn during Biology 2004, include:

- Apply standard microbiological techniques (streak plates, bacteriophage plaque assays)
- Arrange plant specimens into the correct phyla
- Assess the credibility of source material
- Be able to use a dichotomous key to identify gymnosperms
- Collect and prepare a fungal sample for identification
- Compare reproductive structures, dominance, spore type, and vascular tissue between plant phyla (including ovary position and raceme type)
- Describe the diversity of some major groups of prokaryotes: focus on Proteobacteria; Gram-positives; Cyanobacteria.
- Describe the four major plant groups
- Describe the microbial food web (in the ocean): dominance and role of Bacteria; bacterivory and microbial predation; mixotrophy; viruses
- Explain the differences between the three major groups of macroalgae (reds, greens, browns), triphasic life cycle of red algae and complex thallus organization in some brown algae
- Explain the key features of the major plant lineages (Non-vascular land plants, seedless vascular plants, gymnosperms, angiosperms, monocotyledons, eudicotiyledons)
- Familiarity with diagnostic bacterial identification (catalase test, differential media, antibiotic sustainability)
- Identify algal groups based on pigmentation
- Learn and apply aseptic techniques to culture work and sterile transfers
- Prepare a formal lab report on a select topic
- Compare plant and animal organism
- Construct scientific drawings with scale bars
- Contrast generational dominance, spore type, dependence on water, independence from water, and reproduction between the four major plant lineages.
- Describe the Archaea: Shared features with Eukaryotes; Thermophily and Methanogenesis.
- Describe the bacterial species ‘concept’, phylogenetic tree of prokaryotes (including the role of gene transfer)
- Describe the Fungal diversity: nature of hyphae; basic differences between zygomycotes, ascomycotes, and basidiomycotes; Mycorrhizae
- Describe the Nitrogen cycle from a microbial perspective (examples of anaerobic respiration, lithotrophy, nitrogen fixation)
- Describe the plastid diversity in eukaryotes, including primary vs secondary endosymbiosis
- Determine a testable question and alternate hypotheses
- Explain the importance of plants to humans and other organisms (oxygen production, crops, primary producers)
- Prepare slides for use with a compound microscope (wet mounts, Gram stains, bacterial spore stains, and fungal hyphae culture slides)
- Understand structures and functions of major components of, and replication of, prokaryotic cells
- Use a compound microscope with Kohler illumination, including immersion oil

- Contrast plant life cycles between phyla (Hepatophyta, Anthocerophyta, Bryophyta, Lycopodiophyta, Pteriodophyta, Cycadophyta, Ginkogophyta, Coniferophyta, Genetophyta, Anthophyta)
- Contrast the benefits and challenges of moving onto land
- Contrast the tissue arrangement of roots and stems between monocots and dicots
- Describe the different types of pollinators, seed dispersal methods, inflorences, and flowers.
- Describe the importance and diversity of vascular plants and success of terrestrial plant life
- Describe the primary plant body (Root, Shoots and flowers)
- Describe the protist cells and some major groups of Protists; focus on Haptophytes, Diatoms, Apicomplexan parasites, Ciliates, Cellular slime molds (including life/sexual cycles for the latter four)
- Differentiate between the different classifications of fruits
- Differentiate between the different germination types
- Explain the environmental factors which limit bryophyte and seedless vascular plant distribution
- Give examples of Fermentation, Anaerobic respiration, Lithotrophy, and Anoxygenic photosynthesis (vs oxygenic photosynthesis)
- Relate evolutionary adaptations to plant development and reproduction

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Course Materials

Required:

1) Slonczewski & Foster. 2017. Microbiology An Evolving Science. EBook. W.W. Norton & Company. Available at the bookstore.

2) Evert & Eichhorn. 2013. Raven Biology of Plants. Custom Edition. W.H. Freeman and Company. Available at the bookstore.

3) Biology 2004 2017 Laboratory Manual. These will be available through the bookstore.

4) A lab coat is required. Dalhousie university policy states that all students will wear a lab coat when attending a laboratory session with potential hazards. Lab coats can be transported to and from lab in a plastic bag.

5) Supplementary course notes: There are supplementary course notes for parts of the microorganisms section. These will be made available to you later in the term.

Recommended:

For a writing reference we recommend: Kinsely K. 2005. A student handbook for writing in biology. 2nd ed. Sunderland: Sinauer Associates. 237 p. [Dalhousie Killam call number QL 605 P68 1996]

On course reserve at the Killiam Library:

The following items will be placed on course reserve:

- Two copies of Microbiology, An Evolving Science. One on 2 hr loan, one on 24 hr loan
- One copy of Raven Biology of Plants. 8th Ed. 2 hr loan.
- One copy of Introduction to Botany. 2 hr loan.

WEB SITES: The course maintains a brightspace page.

You can access this from the main Dalhousie page by clicking on the brightspace link on the upper right page banner. Once you log in you should be able to see links for any of your classes that have brightspace pages.

The class maintains a class twitter feed @DalBiodiversity. You are not obliged to sign up to twitter or follow this feed. However this feed is for you if want articles on biodiversity, animals, plants, and the occasional picture. As a general rule we will not follow student accounts (we're sure there are things you want to tell your friends and not us).

The Dalhousie University Science Librarian, Michelle Paon, has put together a subject guide for biology. On this page you will find links to the key databases, relevant books, writing guides, and other useful research tools. You can find the subject guide here: http://dal.ca.libguides.com/content.php?pid=453&hs=a, and as a link on the OWL page.

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Course Assessment

Test 1, based on plant diversity lecture material, **March 2, 5:30-7:30 PM**	27.5%
Test 1 is outside of regular class time. Please let us know if you have a conflict	
Test 2, based on microbial diversity lecture material	27.5%
Test 2 is scheduled by the registrar in regular exam period	
Lab mark = Various activities, see Table 3	
Note: Lab exam held in the last week of labs, April 2nd- 6th	45.0%
Total =	100.0%

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Table 3a: Laboratory assessment components for the microorganism portion of the class

You are expected to be familiar with all the material that you will cover in any one period. You can find lab period checklists at the start of each lab.

Date	Lab	Topic Covered	Assessments Due
January 15- 19	1	Introduction Safety Hands (1) Fungi (1) Microscopes	Safety sheet (0 marks) Microscope set up (0.5 marks)
January 22-26	2	Technique Practice Staining Techiques Hands (2)	Reference stain (0.25 marks) Spore stain (0.25 marks) Negative stain (0.25 marks) Hand streak plate (0.25 marks) Hand Gram stain (0.25 marks) Micro Quiz 1- online (1 marks) Completed after labs 1& 2
January 29- February 2	3	Hands (3) Bacterial Unknowns	Hand Gram stain 2 (0.25 marks) Unknown Gram stain (0.25 marks) Unknown EMB streak plate (0.25 marks) Unknown Lawn plate (0.25 marks) Unknown assignment (3 marks): Due Feb 6-9 Group submission
February 5-9	4	Bacteriophage (1) Fungi (2)	Bacteriophage plate 1 (0.25) Microscope Test (0.5)
February 12-16	5	Bacteriopage (2) Fungi (3)	Bacteriophage plate 2 (0.25) Bacteriophage plate 3 (0.25) Pair of fungi slides (0.5) Bacteriophage assignment (2 marks): Due Feb 13-16 Group submission Fungi species report (7 marks): Due March 6-9 Micro Quiz 2- online (1 mark) Completed after lab 4 & 5
February 26- March 2	6	Cyanobacteria, Protists, & microalgae Macroalgae	Sketches from cultured material (1 mark) 1st drawing from natural material (1 mark) 2nd drawing from natural material (1 mark) Micro Quiz 3- online (1 mark) Completed after lab 6

Table 3 continued on following page

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Table 3b (con't): Laboratory assessment components for the plant portion of the class

You are expected to be familiar with all the material that you will cover in any one period. You can find lab period checklists at the start of each lab.

March 5-9	7	Bryophytes	Bryophyte sketch (1 mark) Bryophyte Quiz- online (1 mark) Complete after lab 7
March 12-16	8	Seedless Vascular Plant	Seedless Vascular Plant Sketch (1 mark) SVP quiz- online (1 mark) Complete after lab 8
March 19-23	9	Gymnosperms	Tree cuts sketch (1 mark) Gymnosperm quiz- online (1 mark) Complete after lab 9 Outside gymnosperm quiz- online (1 mark) Due by April 10th.
March 26- 30	10	Angiosperms	Unknown Fruit Assignment (2 marks) Due: April 3-7 Group submission Angiosperm Quiz- online (1 mark) Complete after lab 9
April 2-5	11	Plant Lab Exam	Plant lab exam (12.5 marks)

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Notes on particular assessments:

1) Lab Quizzes

The lab quizzes will be available online AFTER your lab. You will have ONE TIMMED attempt to complete the quiz. You must complete the quiz in 15 minutes. The quiz material will be reviewed in the subsequent labs.

2) Lab Exam

A lab exam will be held in the week of April 2nd-6th. Students are expected to write their lab exam in their registered lab section.

The lab exam will be two hours in duration and will cover all plant lab material. The lab exam will be an untimed station exam, consisting of identification, definitions and short answer questions. Students are expected know and spell the names of the taxa covered in the labs.

3) Assessment of microscope set-up

At some point in the first lab you will be assessed by your TA on how well you have set up your microscope for Kohler illumination. For full marks the light source should be appropriately centred and focussed, you specimen should be appropriately prepared, and you should have the appropriate magnification, brightness and contrast to view your specimen. Call over your TA when you are ready to be assessed.

If you think there is a technical problem with your microscope have it examined before you do your assessment.

In week 4, you will again be tested on your microscope set up, but in this case you will have to identify why a microscope is improperly set up and explain to your TA or lab instructor how you would fix it.

4) Species Report on Fungi

Each student will prepare an individual species report on an unknown fungi. This report is not a formal lab report and is meant to be short, under 5 pages.

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Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

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

The common grade scale defines achievement of each grade level as follows:

A- to A+: "Considerable evidence of original thinking; demonstrated outstanding capacity to analyze and synthesize; outstanding grasp of subject matter; evidence of extensive knowledge base."

B- to B+: "Evidence of grasp of subject matter, some evidence of critical capacity and analytical ability; reasonable understanding of relevant issues; evidence of familiarity with the literature"

C- to C+: "Evidence of some understanding of the subject matter, ability to develop solutions to simple problems; benefitting from his/ her university experience"

For each written & individually assessed assignment in this course submitting work which fulfills the requirements of the assignment will earn you a good grade but full marks will only be awarded for exceptional work. Exceptional work can result from presentation, a creative approach, expansion of the content, or linkage of the content to other classes. In short the is no one thing that will make your work exceptional, instead it will reflect the criteria outlined in the A- to A+ definition.

Note: As the Dalhousie common grade scale specifies grades as a whole number, we will consider the first decimal place when assigning grades and use standard rounding rules.

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Course Policies

1) Lecture Recordings: It is not permissible to make video or audio recordings of the lectures. The PowerPoint slides of the lectures will be made available to you.

2) Absences: It is likely that at some point during the term you will have to miss some instructional time due to illness or other exceptional circumstances. It is your responsibility to contact us as soon as you know you will miss a lab or test.

For labs, the ideal situation would be to cover the material at a later lab session. However, it will not always be possible to accommodate requests to attend an alternate lab. The appropriate accommodation will be decided on a case by case basis. In all cases you are responsible for the missed material.

Make-up examinations will be scheduled to accommodate students who miss an exam through illness and other legitimate reasons. Times, dates and locations will be determined closer to the examination time. Appropriate documentation (Doctors note, official letter from Dalhousie Sports Coach, etc.) WILL be required to receive permission to sit a make-up exam.

If you know of your absence prior to the exam or are ill on the day of the exam please contact the appropriate lecture.

3) Assignments: All work submitted for credit must be completed independently, unless designated as a group project. Group work should be peer-reviewed prior to submission and all members of the group will be assigned the same grade.

4) Late Assignments: Unless otherwise stated all assignments are due at the start of your regular lab period, during the appropriate week. Any assignments turned in after the start of the lab will be penalized at 10% per day.

To be excused from an assignment past this grace period, you will have to provide documentation of a valid excuse.

5) Referencing Style: In your work, ANY and ALL statements that were not empirically derived for yourself as part of an experiment or study, for that assignment, must be credited to a source. When crediting other people's work please use the Name-Date system of the Council for Science Editors (CSE) style. There is a link to the style guide on the OWL website.

All sources should be collected into a list at the end of your work and presented in CSE style. Your source list should be in alphabetical order.

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Referencing & Photo Credits (Con't):

A skill you should be cultivating throughout your academic career is to determine the credibility of your sources. The peer review process, where the methodology, results and broader context of an experiment are written up and submitted to other researchers in the same field of study are the most credible forms published work. Books and documentaries often draw their evidence from the peer-reviewed literature and as such would be considered credible sources. New articles may or may not be based on peer-reviewed sources and so have varying degrees of credibility. Web sources can be very confusing, some are based on the peer reviewed literature, some are based on people's unsupported opinion or current working theories.

There is a credible checklist flowchart to help you determine the credibility of web sources. A PDF copy of the flowchart document is located on OWL, under the lab folder. The flow chart was developed based on the criteria outlined by Dalhousie University Librarians.

Please use the flowchart in conjunction with the following table (This will also be posted on OWL as a word document). As you move through the flowchart add "+" or "-" to your table. As you increase the number of "-" signs the credibility of your site decreases. After you have gone through all criteria you can determine if you site is credible, less credible or not credible.

Table 4 Summary of online source credibility

Web Site	1. Authority	2. Purpose/ Objectivity	3. Currency	4. Accuracy	Overall
1.					
2.					

If you are using websites as a references, please include the table as an appendix to your report.

Photos: Not all photos presented on the internet are available for use. Some were developed for specific companies or sites and require permission or payments for use. However, if you look around you can often find photos that are published with creative commons or educational use licenses. A good source for useable photos is http://commons.wikimedia.org/wiki/Main_Page

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Referencing & Photo Credits (Con't):

If it unclear under which type of license the photo was posted, you must contact the creator of work to ask permission to use it for your project.

When you present a photo you should place the name of the photographer and the license under which the photo is being used beside the photo. The full reference for where the photo was taken from should be included in your reference list.

For example if you wanted to use this super cute photo of a Tardigrada in a presentation you could include the tag "Bob Goldstein & Vicky Madden, Creative Commons license", either underneath or beside the photo.

Then in your reference list you would include the full reference of:

Goldstein B, Madden V. 2008. Wikimedia commons [Internet]. USA: UNC Chapel Hill; [2008 May; cited July 30, 2015]. Available from: https://commons.wikimedia.org/wiki/File:Waterbear.jpg

At some point you may want to use video in your work. YouTube is a good source, but again you need to watch what type of license the video is published under. If it is the standard YouTube license, you can play the video from the YouTube platform, but cannot download it or embed in your presentation. If it is under a creative commons license, you can download and embed it. One thing to watch for is pirated video, ie, clips from shows like The Blue Planet or Shape of Life. If the clips are hosted on the production companies YouTube channel, chances are you may use them. However, if the clips have been posted by a private individual who has taken the clips from a video, it is not likely posted under fair use.

If you use photos/ video in your work, you must 1) ensure the photo is licensed under a creative commons, public domain, or educational use license, and 2) on or near the photo indicate who the photographer is and the type of license it is used under.

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University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

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

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

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)

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

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

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

University Grading Practices

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

Missed or Late Academic Requirements due to Student Absence (policy)

https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

Student Resources and Support

Advising

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

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Science Program Advisors: https://www.dal.ca/faculty/science/current-students/academic-advising.html

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students 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

Academic supports

Library: https://libraries.dal.ca/

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

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

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

Fair Dealing Guidelines https://libraries.dal.ca/services/copyright-office/fair-dealing.html

Other supports and services

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

Student Advocacy: https://dsu.ca/dsas

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