

PSYO/NESC 3170.03 Hormones and Behaviour
Fall 2023 term

Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People. We pay 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.

| Dates and format | Instructor | Teaching assistant |
|--|---|--|
| Sept 5 – Dec 6, 2023 Online asynchronous with weekly online synchronous active learning sessions (optional) | Broderick M. B. Parks* , M.Sc. <i>(he/him)</i> brodiebp@dal.ca *Just call me Brodie, please! Drop-in hours (virtual): 2x/week – check Brightspace | Diana Adamo <i>(she/her)</i> Diana.Adamo@dal.ca Diana will not be holding regular drop-in hours; contact via e-mail |

Course description (from Academic Calendar): This course examines how chemical signals of the neural, endocrine, and immune systems interact to influence the brain and behaviour and how neurotransmitters, cytokines, and hormones control neural and behavioural development, sexual, aggressive, and maternal behaviour. Hormone receptors in the brain, reproduction, puberty, brain sex differences, and stress are also examined.

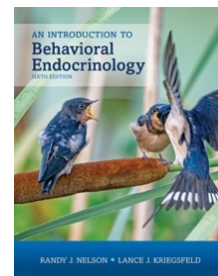
In addition to covering what we know about hormones and their effects on physiology, the brain, and behaviour, **there is a strong emphasis in this course on research design. That is: how do we know what we know, and what reasonable conclusions can we draw from studies using a particular research design?** To that end, lectures will involve interpreting and evaluating empirical research, considering the implications of empirical work on underlying theory, and discussing applications to practice.

Course pre-requisites: PSYO/NESC 2470 (Systems Neuroscience) *or* PHYL 2041 (Human Neurophysiology)

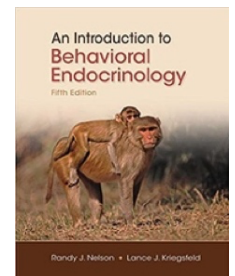
Note: While not an official pre-requisite, PSYO/NESC 2000 (Methods in Experimental Psychology and Neuroscience) is **strongly recommended** for students in taking this course. Students without PSYO/NESC 2000 are encouraged to be proactive about filling any knowledge gaps which may prevent success.

Required textbook: Nelson RJ, Kriegsfeld LJ (2023) *An Introduction to Behavioural Endocrinology, 6th edition*. Oxford University Press/Sinauer.

- Hard copies of the 6th edition are available for purchase from the university bookstore; **e-book also available** (see Brightspace)
- **Note:** The 5th edition of this textbook is also suitable for use in this course and has been used in the last several iterations of this course (up to Winter 2022); **used copies may be available.**
- **If the textbook cost is prohibitive, please contact me – there are solutions!**
- Readings are provided on Brightspace for both the 5th and 6th editions (print and e-book).



6th edition
(pub. 2023)



5th edition
(pub. 2017)

Course format:

This course is delivered **entirely online**. In this format, you can work on and complete course content on your own schedule. The course is structured on a week-by-week basis; content for each week is posted all at once and in advance, and you may work through it at your own pace. **Suggested dates to complete content are provided on Brightspace (and on page 7 of the syllabus) on a MWF schedule to keep you on track, as some assessments (quizzes, exams) have “hard deadlines”**. This course is divided into three units: the first unit (Weeks 1-5) covers the fundamentals of behavioural endocrinology, the second unit (Weeks 6-9) covers classical themes, and the final unit (Weeks 10-14) covers special topics.

Synchronous active learning sessions:

Each week, the teaching team will hold synchronous online sessions (1 hour/week) dedicated to “active learning”. During these sessions, the teaching team will review tricky course material, answer questions, and discuss study strategies to prepare for exams. Associated with each lecture is a short active learning activity; these activities will generally form the basis of each weekly session. You are strongly encouraged to complete the active learning activity **after watching the lecture, and in advance of the weekly active learning session (*see pages 5-6)**. Examples of active learning activities include: creating flowcharts and summary tables based on lecture material, critically evaluating primary research articles, reviewing (and critiquing) old exam questions/answers, etc. **Active learning sessions are held through the CollaborateUltra platform (integrated into Brightspace)**. The specific dates/times of the weekly sessions will be determined in the first week of classes, depending on student availability and preference.



Attendance at active learning sessions is optional. However, you are strongly encouraged to attend these sessions synchronously (i.e., live), as some active learning materials may be tested on exams. Active learning sessions will be recorded and posted to Brightspace **only if there is sufficient student attendance to run the sessions (we can't hold an active learning session if no one shows up)**. Additional synchronous sessions may be held throughout the term as needed, depending on student preference (e.g., writing workshops, exam reviews, etc.) – the dates of these extra sessions are TBD but will be shared via Brightspace after consultation with students.

Assessment and grades:**Overview of assessments**

| Assessment | Important dates |
|---|--|
| Exams (3 total) | Exam 1 – October 6 Exam 2 – November 3 Exam 3 – TBD (during regular exam period, December 8-19) |
| Quizzes | Weekly – best 8 of 9 quizzes (lowest dropped, including missed) |
| Written Assignments Science Communication & Literacy (2 total) | Last day to submit both assignments – December 8 (*see page 4) Assignment 1 – group assignment (maximum 4 students per group) Assignment 2 – solo assignment |

Assessment scheme

| Assessment | Scheme #1 | Scheme #2 | Scheme #3 |
|---------------------------------|----------------------------------|---|--|
| Exam 1 | 20 marks | 60 marks (lowest = 10 marks, other two = 25 marks each) | 75 marks (highest = 45 marks, other two = 15 marks each) |
| Exam 2 | 20 marks | | |
| Exam 3 | 20 marks | | |
| Quizzes (best 8 of 9) | 20 marks (8 x 2.5 marks each) | 20 marks (8 x 2.5 marks each) | 10 marks (8 x 1.25 marks each) |
| Assignment 1 | 10 marks | 10 marks | 5 marks |
| Assignment 2 | 10 marks | 10 marks | 10 marks |

At the end of term, final course grades will be calculated according to all three assessment schemes (above) and **the scheme that produces the highest grade will be the final numerical grade**. The final numerical grade (out of 100) is then converted to the final letter grade according to the Dalhousie University Common Grade Scale (below). **Grades cannot be adjusted with extra work.**

Dalhousie University Common Grade Scale

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

Exams

Exams are **open-book and non-cumulative**, covering **all previously unexamined material** delivered up to the date of the exam, including: (1) readings; (2) lectures; (3) active learning sessions; and (4) any other posted materials (journal articles, videos, links, etc.). **Exam questions are generally “application-based”** (as opposed to “content-based” quizzes) and consist of multi-select, multiple-choice, and short answer written questions, among others. Exams are completed on Brightspace; **you have 180 minutes* to complete each exam (*see page 5)**. You should complete exams on a laptop or desktop computer, as some exam questions may contain figures/images which may not format properly on a mobile device.



IMPORTANT: You are required to complete exams independently. You are welcome to study with your peers in advance of the exams, but exams must be completed individually. Evidence of collaboration during exams will be considered a violation of Dalhousie’s Academic Integrity policies and will be dealt with according to the disciplinary procedures outlined by the Faculty of Science and the University Secretariat (see Section ‘B’, page 8).

Student Declaration of Absence (SDA): Missed exams must be communicated to the course instructor immediately. Students who miss an exam **are required to write a make-up exam at a later date**, in consultation with the instructor. To be eligible for a makeup exam, you must fill out and sign a SDA form (available on Brightspace) and submit it via the Brightspace folder **within 24 hours of the original exam date (i.e., by 8:30 PM Halifax time the day after an exam)**. Students who do not submit an SDA within 24 hours will automatically receive an exam mark of 0. **Sending an e-mail to the course instructor or TA without submitting a SDA on Brightspace is not sufficient.**

Note: SDAs cannot be used for any other course assessment (quizzes, written assignments), and cannot be used to transfer the weights of one exam to another.

Quizzes

Weekly quizzes are **open-book** and cover **all material** delivered since the previous quiz. Quizzes consist of a short number (typically 5-6) of multiple choice, multi-select, or True-False questions, and are focused primarily on the **content** delivered in the lecture recordings and/or readings. Quizzes are completed on Brightspace; **you have 30 minutes* to complete each quiz (*see page 5)**. **There are 9 quizzes throughout the term; the lowest quiz score (including any missed quizzes) will be dropped.** Because quizzes are released immediately after the due date, makeup quizzes are not possible (in the interests of academic integrity). Before each exam, tricky quiz questions will be reviewed in short “post-mortem” videos posted to Brightspace. “Self-post-mortems” are strongly encouraged, as quiz questions may be recycled on exams.

Written Assignments – Science Communication and Literacy

Behavioural endocrinology is a flourishing field of academic research. As a consequence, hormones (and their effects on physiology, the brain, and behaviour) are brought up *all the time* in our day-to-day, especially in mass media or “popular” science, and often in ways that may not be the most scientifically accurate or rigorous (think about how many times you’ve heard about hormones on social media or in ads for products). As consumers, we should be constantly evaluating the (sometimes wild) claims about hormones and/or the effects of hormones on physiology/behaviour we are exposed to. As scientists, we should be similarly critical when evaluating new scientific research generated in the academic sphere. Throughout the term, we will learn about

the role of hormones in a wide variety of subjects of (topical) interest, including reproductive development, sex and gender differences in brain/behaviour, biological rhythms, stress, mental health, and more. We will also learn about the importance of using a solid research design when studying hormones and behaviour. **For these written assignments, you will apply this new knowledge (as well as the critical thinking/scientific literacy skills you have built throughout your degree) to both popular media and academic research articles focused on hormones and behaviour.**

In Assignment 1, which **may be completed in groups (maximum 4 students per group)**, you will critically evaluate a topic, claim, product, or piece of content popularized by popular/social media or culture (of your choice) related to hormones and behaviour. Be creative when choosing your assignment topic/source – particularly outlandish content/claims/products is/are welcome (and strongly encouraged!). **In Assignment 2**, which **must be completed individually**, you will summarize and critically evaluate a recently-published empirical journal article (of your choice) related to hormones and behaviour **Hint:** choose an article related to a topic you enjoy – it will make the writing easier, and more interesting!

Full instructions for both assignments (including word count, formatting, etc.), as well as rubrics and graded examples are available on Brightspace. These instructions also contain important information on how to choose your assignment topic (#1) and journal article (#2) – **please review these carefully before submission. You will lose marks if you choose a topic/article that is not appropriate/relevant for the assignment.**

Assignments can be completed and submitted anytime throughout the term. However I recommend waiting until reading week (Week 11) before getting started. In theory, you can complete and submit both assignments early in the term – but, the point of these assignments (and a key part of how they will be evaluated) is for you to apply the knowledge you’ve learned in this course and use a critical eye when evaluating your sources. That is, to do well on these assignments, you need to know a bit about hormones and behaviour. These assignments are intended for you to think critically, not write *ad nauseam*. Assignments are relatively short and can be completed on a short timeline. **The last day to submit both assignments is Friday, December 8th (11:59 PM Halifax time).** I am offering a three-day grace period after the deadline for students to submit without penalty. Late submissions (outside the grace period) will be penalized 10% per day (= 24 hours) late, up to a maximum of 4 days. Assignments submitted after December 15th at 11:59 PM will receive a mark of 0, no exceptions.

Some important notes on online assessments in this course:



What does “open-book” mean? All assessments in this course are open-book, meaning you can use lecture notes, lecture slides, recordings, the textbook, and any other course materials when completing assessments. In principle, this means you *can* also conduct general internet searches when completing assessments (I don’t use proctoring software to prevent this, as I think it’s a gross violation of your privacy as a student). That said, please remember: exam questions are application-based (i.e., not particularly conducive to Googling or ChatGPT) and will be evaluated in the context of what is discussed in this course, not what is out there on the internet.

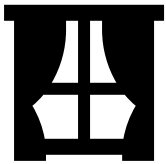


On plagiarism: If, when completing any written assessment in this course (e.g., short answer questions on exams, written assignments) you are inspired by something you find online, **you must cite your source (including links), and put the information into your own words. Do not copy and paste.** Short answer exam answers that include information drawn from outside materials may be eligible for full marks **only if a source is listed.** Written assignments may be scanned with plagiarism software (e.g., Urkund), but I recognize that coincidences happen and that some of the things flagged by originality software are, frankly, absurd. I assume good faith unless there is a clear reason to suspect genuine plagiarism.



Time limits (quizzes, exams): Quizzes are typically available as soon as each week’s content is posted, and close at 11:59 PM (Halifax time) on the specific due date (see page 7). **Exams are open from 8:30 AM to 8:30 PM (Halifax time) on the date of each exam; you may complete their exam anytime within this 12-hour availability window.**

While there are time limits associated with course assessments (quizzes: 30 min; exams: 180 min), **your exam will not end or shut down automatically after these time limits have elapsed.** The purpose of this flexibility in assessment timing is to eliminate any pressure (or stress!) associated with internet connectivity issues, computer troubles, time zone differences, assessments in other courses, work schedules, and/or other extenuating circumstances. This also allows students with formal accommodations from the Student Accessibility Centre to work within their accommodations as needed (without any additional Brightspace intervention). **However, this flexibility with exam/quiz timing should not be abused.** Assessments in this course are not “take-home” assessments, they are designed to be completed within a particular timeframe. **The teaching team will be monitoring assessment times to ensure students are completing assessments within appropriate (but flexible) time limits.** Students who abuse this flexibility (without a reasonable explanation) may receive a penalty and/or be referred to Academic Integrity.



Availability windows (quizzes, exams): So long as students enter the online quiz/exam on Brightspace before the availability window closes (11:59 PM for quizzes, 8:30 PM for exams), students will have the full time to complete the quiz/exam. **It is strongly encouraged that students give themselves ample time before the availability window closes to write their quizzes/exams.** Students who are “locked out” of a quiz/exam after the availability window closes may not be able to get back in without an override; **the teaching team does not guarantee they will be monitoring e-mails late into the evening/overnight.**



Reviewing assessments (quizzes, exams): Students are able to review graded quiz and exam submissions on Brightspace after grades are posted. Correct answers to quiz and exam questions are not visible (in the interests of academic integrity). **Short answer exam questions which receive part marks will always have feedback. Please review this feedback before sending an e-mail to the teaching team.** If you find a short answer exam question without feedback, e-mail the teaching team, as it may have been missed.

Recommended sequence for success in PSYO/NESC 3170:

As in all 3000-level courses in PSYO/NESC, there is a lot of material to cover this term. To stay on top of this course, I recommend tackling each week’s material in the sequence described below.

For each topic/lecture:

1. Read the readings.

- Take a first pass at the readings **without taking notes** (some might call this ‘skimming’). Don’t worry if you don’t understand everything in perfect detail: the purpose of this first pass is to familiarize yourself with the material at a broad-strokes, general level.
- Readings associated with each topic are fairly short, and **should typically not take more than ~30 minutes on this first pass.**

2. Watch the lecture (and any other posted materials).

- **The lecture is usually the primary source of content for each topic**, and is often where key points from the readings are discussed and expanded upon in more detail.
- PDF versions of the lecture slides are posted on Brightspace for note-taking purposes.
- Lectures in this course are quite short (typically \leq ~20 minutes) and are image-based. All lectures are captioned and can be sped-up/slowed-down depending on student preference.

3. Return to the readings, if needed.

- If something still doesn't make sense after watching the lecture, return to the textbook for a closer reading. **This is where additional note-taking may be helpful.** How long you spend on this step will probably vary.
- If after re-reading the textbook things still don't make sense, feel free to consult additional sources (material from other courses, online sources, etc.) and/or consult step 6 (below).

4. Complete active learning materials.

- Active learning materials are usually quite short and are intended for you to apply the knowledge from the textbook/readings – which will help when preparing for exams.
- **Try and complete active learning materials *before* attending weekly synchronous active learning sessions (step 5)** – you (and your classmates) will get more out of them.

5. Attend weekly active learning sessions (or watch recording).

- Attending the sessions synchronously (i.e., live) is strongly encouraged, if possible (see above, page 2). If you cannot attend the session synchronously, make sure to watch the posted recording shortly after its posting. If you are watching the active learning sessions asynchronously, still be “active” when following along – that is, if during the session you are given 2 minutes to answer a question, pause the video, answer it, and then proceed.
- Do not wait until just before the exam to watch the active learning sessions in one pass – there will be too much to watch and you won't get as much out of them.

6. Attend weekly drop-in hours, if needed.

- Twice a week Brodie will be holding drop-in hours via CollaborateUltra to answer any questions you may have about the course. Take advantage of these sessions – those hours are specifically blocked off for me to help!

Course learning outcomes:

Note: additional weekly learning outcomes available on Brightspace

1. Define hormone and distinguish it from other types of cellular communication
2. Describe the major endocrine glands and their function(s) and explain the regulation of hormone synthesis, release, and deactivation
3. Compare and contrast different classes of hormones
4. Explain the role of gonadal hormones in sexual differentiation and development
5. Evaluate evidence of hormonal influences on sex and gender differences in brain and behaviour
6. Compare and contrast effects of gonadal steroids in sexual behaviour and reproduction in males and females
7. Describe the role of daily and seasonal rhythms and their role in coordinating typical physiological and behavioural functioning
8. Describe stress hormones and explain their effects on behaviour and physiology over the lifespan
9. Describe the influence of hormones on affective disorders and mental health
10. Evaluate and design research on hormone effects in humans and non-human animal models
11. Critically analyze popular or social media related to hormones and behaviour
12. Critically analyze, summarize recently published primary scientific literature in behavioural endocrinology

Course Schedule

Note: Topics and schedule are tentative and are subject to change. Consult Brightspace for most up-to-date schedule.

| Week | Date (*suggested) | Topic | Deliverables (due 11:59 PM) |
|--------------------------|--------------------------------|---|--------------------------------|
| 1 | Sept 6 | Course Overview | |
| | Sept 8 | History of Behavioural Endocrinology | |
| 2 | Sept 11 | Hormonal Communication | |
| | Sept 13 | Research Design in Behavioural Endocrinology | |
| | Sept 15 | Research Techniques in Behavioural Endocrinology | Quiz 1 |
| 3 | Sept 18 | Endocrine Glands | |
| | Sept 20 | Peripheral Hormones | |
| | Sept 22 | Steroid Hormones | Quiz 2 |
| 4 | Sept 25 | Hypothalamic and Pituitary Hormones | |
| | Sept 27 | Hormone Receptors | |
| | Sept 29 | Hormone Regulation | Quiz 3 |
| 5 | Oct 2 | <i>National Day for Truth and Reconciliation – no classes</i> | |
| | Oct 4 | <i>Hold for Exam 1 review or catchup</i> | |
| | Oct 6 | EXAM 1 – covers weeks 1-5 | |
| 6 | Oct 9 | <i>Thanksgiving Day – no classes</i> | |
| | Oct 11 | What are the Sexes? Sex Determination and Differentiation | |
| | Oct 13 | Atypical Differentiation | Quiz 4 |
| 7 | Oct 16 | Sexual Dimorphisms | |
| | Oct 18 | Sex Differences in Brain and Behaviour I | |
| | | Sex Differences in Brain and Behaviour II | |
| | Oct 20 | Male Sexual Behaviour I | |
| Male Sexual Behaviour II | | Quiz 5 | |
| 8 | Oct 23 | Female Reproductive Cycles | |
| | Oct 25 | Female Sexual Behaviour I | |
| | Oct 27 | Female Sexual Behaviour II | |
| 9 | Oct 30 | Puberty | Quiz 6 |
| | Nov 1 | <i>Hold for Exam 2 review or catchup</i> | |
| | Nov 3 | EXAM 2 – covers weeks 6-9 | |
| 10 | Nov 6 | Biological Rhythms I | |
| | Nov 8 | Biological Rhythms II | |
| | Nov 10 | Hormones and the Environment | Quiz 7 |
| 11 | Nov 13-17 | READING WEEK – no classes | |
| 12 | Nov 20 | What is Stress? | |
| | | Stress and Damage | |
| | Nov 22 | Basal Glucocorticoids | |
| Nov 24 | Stress-Induced Glucocorticoids | Quiz 8 | |
| 13 | Nov 27 | Early Life Stress & Coping I | |
| | | Early Life Stress & Coping II | |
| | Nov 29 | Special Topic TBD | |
| Dec 1 | Special Topic TBD | | |
| 14 | Dec 4 | Hormones & Depression | |
| | Dec 5 | Perimenstrual Syndrome | |
| | Dec 6 | <i>Hold for Exam 3 review or catchup</i> | Quiz 9 (Dec 7*) |

Note: Exam 3 will be held **ONLINE** during the regular exam period (Dec 8-19) – the exact date is scheduled by the Registrar's Office and is TBD. Exam 3 covers material from weeks 10-14 and follows same structure as Exams 1-2.

University Policies and Statements (syllabus section ‘B’)

Recognition of Mi’kmaq Territory

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

Internationalization

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

Academic Integrity

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

Accessibility

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

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion – Culture of Respect

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

Student Code of Conduct

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

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information

regarding the Fair Dealing Policy can be found at:

https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. Additional information regarding Originality Checking Software can be found at: https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.html

Student Use of Course Materials

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

Faculty of Science Student Resources and Support (syllabus section ‘C’)

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

South House Sexual and Gender Resource Centre: <https://southhousehalifax.ca/about/>

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>