DALHOUSIE UNIVERSITY

Faculty of Science: Department of Economics
Course Syllabus
ECON3332.03: Natural Resource Economics
Fall, 2024

Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people. Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.

Instructor: *Ruth Forsdyke, Ruth.Forsdyke@Dal.ca, room C12, Maxwell House*
Lectures: Tues, Thurs. 13:05 - 14:25, Studley, McCain Arts &SS, rm 2190
Office Hours (Professor):
In Person (Room C12, Econ. Department): Friday, 11:30 am - 12:20 pm
Online (via Brightspace >> Collaborate): Wed, 11:30 am - 12:20 pm
TA: no TA
Course Delivery: In person, lectures not recorded.
If you need help and are unable to attend these office hours, please email us to set up an appointment.

Part A: Course Information

Course Description:
CREDIT HOURS: 3
This course focuses on intertemporal economics and the economics of market failure as they pertain to the use of natural resources. A selection of resource sectors will also be discussed. Fisheries, agriculture, forestry, and energy represent possibilities, but this will vary from year to year.
NOTES: Approved with Canadian Studies. All Economics courses, unless stated otherwise, have a minimum grade requirement of C for their prerequisite courses.
FORMAT: Lecture

Course Prerequisites and Exclusions:
PREREQUISITES: ECON 2200.03 (or ECON 2210.03 or ECON 2220.03), MATH 1000.03 or equivalent with minimum grades of C

" ... fishing at the current scale is enabled by large government subsidies, without which as much as 54% of the present high -seas fishing grounds would be unprofitable at current fishing rates ... these results support recent calls for subsidy and fishery management reforms on the high seas." Enric Sala et al. (2018)

Course Materials:
- no required textbook
*Readings, videos, and other media are **posted on Brightspace** under content, discussions, announcements , and assessment. A reading list is shown with each topic in the chart in the "Content" section below.*

*The most suitable textbook, **Hartwick and Olewiler**, 1998, (**H&O**) is out of print but I have put two copies of the 2nd edition and one copy of the 1st edition on Reserves (2 hour loan) in the Killam Library, along with some other Natural Resource Books.*

Hartwick, John M. and Nancy D. Olewiler (1998) ***The Economics of Natural Resource Use*** (Addison-Wesley, 1998, 2nd edn.)

The following e-book is available via the Killam Library at the Link Below:
Aruga, Kentaka (2022) ***Environmental and Natural Resource Economics***, Springer, Switzerland.
https://link-springer-com.ezproxy.library.dal.ca/book/10.1007/978-3-030-95077-4

- Online material for the course is available in Brightspace under **"content", "discussions",** "**announcements**", and "**Assessments**".
- lecture slides are posted after the class.
- Students are responsible for checking "**Announcements**" regularly to be sure not to miss important information.

Course Objectives/Learning Outcomes:

1. Understand reasons causing depletion of both non-renewable and renewable resources.
2. Understand the importance of sustainability of natural resources and management for sustainability.
3. Understand and be able to apply a variety of models to explain resource depletion for both renewable and non-renewable resources and use the model to investigate policy solutions.
4. Understand ethical and moral dimensions of natural resource use including criteria to judge policy alternatives, while considering the concept of "justice".
5. Understand the logic of discounting and how to apply it to natural resource problems.
6. Explain the difference between the interest rate and the social discount rate and relate to microeconomic and macroeconomic models.
7. Explain how different moral positions affect social discount rate choices and how this may affect rates of extraction of natural resource use.
8. Practice problem solving skills by applying economics in the context of natural resource economics
9. Learn how to find scientifically valid information on resource economics
10. Learn and practice critical thinking, writing, and communicating.
11. Understand the seriousness and urgency of making human resource use sustainable and what you can do to help.

Course Assessment:

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)	

There are two course assessment schemes as indicated below.
Scheme 1 (poster and no video with more weight on midterm and final exam).
Scheme 2 (poster and video with less weight on midterm and final exam).
Your grade for both schemes will be calculated and you will receive the higher of the two grades.

Component	Marks	Date, Details
Midterm	20	Thurs, Oct. 24th, in person on paper in class
Final Exam	40	in person on paper, scheduled by Registrar
Assignments	15	best 2 out of 3 (2 before midterm and 1 after midterm)
Group Poster Presentation	5	Proposal, 1 page (Oct 10), meet with professor to discuss prior to this.
	15	Present poster during poster session. submit poster (Nov. 19th or 21)
	5	Attendance at Poster Session (Nov. 19th and 21) Evaluate other posters, other group members, and self, submit to Brightspace (Nov. 26th)

Details on Course Work and Assessment

Assignments:
- submit via Brightspace (Assignments and/or BS Quizzes)
- best 2 out of 3

Readings: are
- posted on first page of the slides and there is a tentative list on the topics table below.
These will help you to add context to the slides and help you to link ideas together to "see the big picture".

Lecture Slides: posted after class.

Practice Problems: provided for practice and are NOT handed in. **Answers** are posted so you can check your answers and if you get stuck, you may peak at answers to help you to see how to proceed. However, do your best to try the problem on your own before peaking at the answers.

Discussion Board (optional): Participate in Discussion board forums by means such as asking a question, making a comment, relating class content to real world events (ex. link to news article with brief explanation), or responding to posts made by the professor, TAs, or other students, and making helpful posts. You may either use your name or participate anonymously (meaning that other class members will not know who you are but the professor and teaching assistants will know your name).

Virtual Rooms (Collaborate): These are used for office hours and meetings and allow students to interact via video, audio, and chat. A room will be open all the time for meetings and

can be accessed via "**content**">> "**office hours and virtual meeting rooms**". You may wish to meet with your group or study buddies via these rooms.

Office Hours: There are a mixture of online and real office hours (see above). If you are unable to make these hours and have a question, please email the professor or TAs to set up an appointment. Dependent upon Covid conditions, office hours may be moved entirely Online.

Math Background:

Students should be familiar with basic algebra like solving equations to find unknowns, the rules of exponents, natural logarithms, and graphing. Some basic calculus will be used but the concepts will be explained, and review provided.

Poster Presentation:

The poster presentation is group work. Prior to making your poster, you will submit a proposal and set up an appointment to discuss your topic with the professor (or TA if available). Your group will explore a particular resource. Examples might include oil, shale gas, the Congo Rainforest, gold, skipjack tuna in the Indian Ocean, Canada's boreal forests, Bluefin Tuna, Nova Scotia's Lobster Fishery, Diamonds, cobalt (used in lithium ion batteries), lithium, horseshoe crabs, bison, Vaquita dolphin, biodiversity, healthy Ph. Ocean, the Northern Summer Sea Ice and Ice sheets on Greenland, Glaciers in the Rocky Mountains, locally adapted seeds, or water buffalo in Iraq. In the project, you will relate theoretical concepts and theory learned to your particular resource, and you will collect data such as prices and extraction rates. Is the resource being sustainably managed and how would we determine this? What policies are currently being used to manage the resource. If the resource is not being sustainably managed, discuss possible policy tools to bring about sustainability.

Course Content:

- topics and readings are tentative as time permits,
- changes including additions of subtractions will be announced in class and recorded on the cover page of the relevant slides.
** refers to required background reading while "no *" are extra.*

Lecture # and Topic	Background Readings	Reading in H&O (on reserve or Kentaka)
L1_Introduction: What is Natural Resource Economics? Why is it important? How will we study it?	- slides * Natural Resources Canada 10 Key Facts at https://natural-resources.canada.ca/science-and-data/data-and-analysis/10-key-facts-on-canadas-natural-resources/16013	(H&O, ch. 1&2)
L2 - Intertemporal Decision Making - determinants of interest rates - mechanics and logic of discounting. - interest rates vs social discount rate.	- VIDEO: On intertemporal consumption smoothing and interest rate - slides	(H&O, ch. 1&2)
L3_Models of Land and Water Use - The Concept of Economic Rent	* Von Thünen Model of Agricultural Land Use (Mr Sinn) (short video) https://www.youtube.com/watch?v=yZDy7bTA82k	H&O, ch. 3

- Ricardian (different land quality) vs. VonThünen (location model) - Water pricing (monetary non-equity weighted efficiency vs. equity).	* Von Thünen, J.H (1966) The Isolated State, An English Edition, pg 144 - 158, German version 1826 - 1863, [read for broad overview] https://archive.org/details/isolatedstateeng0000thun/page/158/mode/2up	
L4_Renewable Resources (Fishery) - Gordon-Shaefer Model of the Fishery - extinction	* Kentaka (Section 5.2.2, 133 - 145) Economics and Fisheries Resources. OR Pearce and Turner (1990) Economics of Natural Resources and the Environment, Ch. 16, Renewable Resources, pg. 241 - 261, John Hopkins University Press, UK. * H. Scott Gordon (1954) pg. 88-99 A Common Property Resource: The Fishery, The Journal of Political Economy, 62 (2), pg. 124-142 Copes, Parzival (1970) 'The backward-bending supply curve of the fishing industry.' Scottish Journal of Political Economy 17, 69–77	Ch. 4 (H&O, 90-126) Ch. 4 (H&O, pg. 126 - 133)
L5_Policy For Renewable Resources (the Fishery) - community based fisheries management, non-tradable quotas, fishing fees, Individual transferable quotas (ITQs)	* Kentaka (Section 5.2.2, 145 - 147) Fisheries Management. * Ostrom, E.(1990) *Governing the Commons; The Evolution of Collective Action*, Ch. 3, Analyzing long-enduring, self-organized, and self-governed CPRs, pg. 58 - 102. * Copes, P. & Charles, A. (2004, Oct.) Socioeconomics of Individual Transferrable Quotas and Community Based Fishery Management, Agriculture and Resource Economics Review, 33(2), pg. 171 - 181 Copes, P. & Pálsson (2000) Challenging ITQs: Legal and Political Action in Iceland, Canada and Latin America A Preliminary Overview, IIFET 2000 Proceedings.	Ch. 5, H&O Kentaka (Section 5.2.2, 145 - 147)
L6_Non-renewable resource extraction (Mining) - durable vs. non-durable (ex. gold vs. oil) - Hotelling Rule, Hartwick r% rule - Backstops, choke prices, and exhaustion	* H&O, Ch. 8, Non-Renewable Resource Use: The Theory of Depletion	Ch. 8, 9 (H&O) Kentaka, (section 5.2) pg. 115 - 122
L7_Renewable Resources, Forests - Silviculture, Clear Cut, Biodiverse healthy forest ecosystems, agroforestry, vs. plantation monocultures. - harm due to climate changes, and forest damaging human activities such as clearing for agriculture. - beatles and fires, role in carbon sequestration. - Faustman Model - Externaliites and market power. - colonialism	* Kentaka, pg. 122 - 133, Economics and Forest Resources OR * Conrad, J.M.(2010) The Economics of Forestry, 132 - 152, Cambridge University Press. Samuelson, P.A., "Economics of Forestry in an Evolving Society," *Economic Inquiry* XIV, Dec. 1976, 466-92. [quite mathematical] OR Tietenberg, T. & Lewis, L.(2015) Environmental and Natural Resource Economics, pg. 254 - 275.[quite descriptive] * Greenpeace (2007) Carving up the Congo, video at: https://www.youtube.com/watch?v=xxMLYNmRcI	Ch. 10 (H&O) Kentaka, Section 5.2.1, pg. 122 - 133
L8_Dynamic Models - steady state economies or collapse.	* Brander, J.A. & Taylor, S.M. (Mar., 1998) The Simple Economics of Easter Island: A Richardo-Malthus Model of Renewable Resource Use, AER, 88(1), pg. 119 - 138. Diamond, J. (2005) Collapse:	Ch. 11(H&O)

- predator prey model, humans as the predator.	How Societies Choose to Fail or Succeed, Ch. 2 "Twilight at Easter" Some of the math is beyond the level of the course, so I will provide an oveview of an overview of how the model works.	
L9_Economic Psychology and Resource Management (Cognitive Dissonance and Information Problems, Quasi-hyperbolic discounting)	* Akerlof, G. (1989, Spring) The Economics of Illusion, *Economics & Politics*, 1, pg. 1 - 10. Thaler, Richard (2015) Misbehaving, Will Power: No Problem, pg. 87 - 98, "quasi-hyperbolic discounting")(descriptive) *VIDEO "A Conversation with James Hansen" at https://www.youtube.com/watch?v=jarAWIGML5k	
L10_Market Power in the Resource Sector - Monopsony/Oligopsony buyers of natural resources (wheat, coffee, oil) - Fair Trade	- Slides Robinson, J. (1933) Economics of Imperfect Competition, Ch. 18 & 19, pg. 218 - 231.	
L11_Resource Curse	* Sachs, J.D. & Warner, A.M. (2001) The curse of natural resources, European Economic Review, 45, 827 - 838.	
L12_The Problem of Subsidies	* Ruseski, G.(1998) International Fish Wars: The Strategic Roles for Fish Licensing and Export Subsidies, JEEM, 36, 70 - 78. Sala, E. et al. (2018) The Economics of Fishing the High Seas, *Science Advances*, pg. 1-13. Sakai, Y., Yagi, N., & Sumalia, U.R.(2018) Fisheries Subsidies, the Interaction between science and policy, Kotchen, M.J.(2021) The Producer Benefits of implicit fossil fuel subsidies in the United States.	Ch. 11 Appendix (H&O)
L13_Wrap-up & Sustainable Economics Revisited - human Carrying Capacity - concept of an optimal population	* Daily, G.C. & Ehrlich, P.R.(1992, Nov.) Population, Sustainability and Carrying Capacity, BioScience, 42 (10), pg. 761-771. * Daily, G.C., Ehrlich, A.H., & Ehrlich, P.R. (1994, July) Optimum Population Size, Population and Environment, pg. 469 - 475. * Lesthaeghe, Ron (2014) The second demographic transition: A concise overview of its development, PNAS pg. 1 - 4.	Ch. 12 (H&O)

For some of the above papers, the math is beyond the level of the course and descriptive approaches in combination with basic, algebra, graphs, and calculus will be employed.
** refers to readings that you should read, non-starred items are recommended but optional.*
** not all components of all readings will be covered. The course lectures and slides should help you to determine how much time to devote to readings. If you are uncertain, please ask.*

Course Policies:

Late or Missed Midterms or Assignments: If you miss a midterm or assignment due to illness, as soon as possible, inform the professor via email and attach a signed **Declaration of *Absence (Student DOA) form:*** This form may only be used twice for this course but NOT for the final exam. These are available at: https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

In the case of a ***missed midterm or more than one missed assignment***, other evaluation components will be given higher weight. There is no make-up midterm.
If the ***final exam is missed due to illness***, please inform the professor by email as soon as possible to arrange to write an alternative exam. **A sick note from a qualified medical practitioner is required for a missed final exam**.

Late assignments receive a *maximum penalty of 5% per day*, unless the student submits a DOA form and *will not be accepted after answers have been posted on the Brightspace*.
Class slides are a complements readings and may be highly imperfect substitutes. The readings should enable you to more comprehensively understand lectures and slides.

Students are responsible for ***checking Brightspace "Announcements" regularly***. Important information to guide your learning as well as occasional corrections to assignments or test review questions is posted there.

Online Access: When connecting to online resources, you are responsible for observing any applicable laws of the country you are connecting from.

You are responsible for establishing whether you have access to all course material as soon as the term begins and before the ADD/DROP date. If you do not have access to certain material, inform the instructor as soon as possible. Alternative access methods are not guaranteed.

If you are sick, please get a **covid rapid test** and do not come to class unless you are negative. Even if you read negative, but you have not been feeling well or have been near someone who has covid, it is highly recommended that you wear a mask to protect others. Find out what you missed via emailing other students (or TA or professor if you do not know other students) and catch up via online content. If you are ill, and wish to attend office hours, please attend the available ONLINE office hours.

Gifts may be a conflict of interest, so please do NOT give either the professor or the teaching assistant gifts. If you want to thank us by email, a small written card, or dropping by the office, AFTER you receive your grade, that is fine.

Students are responsible for **checking the final exam schedule prior to booking any flights. EARLY final exams will NOT be scheduled under ANY conditions**, so please do NOT ask.

How to Learn in this Course:

- attend class -- if you have to miss a lecture (due to illness or a varsity sports team event for example), find out what you missed and if there is an available reading, video, etc., watch it.
- attending class will help you to establish a rhythm and reduce chances of falling behind.
- do your best to pay attention in class.
- take notes in class -- this will force you to process the information and help you to pay attention so as to make the best possible use of class time. If you missed some parts,

leave a space and fill this in later using the slides, videos, or asking the professor or TA during office hours, etc.

- read through course syllabus to get an overview of what lies ahead.
- make a schedule, write down due dates in your planner and set aside times to study.
- Manage your time and **avoid distractions such as social media while studying**.
- After logging into Brightspace, check **Announcements** for new information.
- do all assignments-- start early -- if you get stuck, come and ask for help during office hours. Other students may also be helpful!
- read and work through readings using the slides to guide your focus and watch any posted videos. Take notes organizing the material in a manner that makes sense to you and relates material to prior knowledge. Charts, flow charts and mind maps may be helpful. Work through the mathematical problems and write down and/or talk through the method used. Make summaries to identify key points.
- do the practice problems on your own. If you get stuck, peak at the solution and then try on your own again. Repeat as necessary. Note down where you went wrong in your initial attempt. If you are still stuck, ask the professor to explain.
- relate course concepts to other things you know.
- ask questions while studying, in office hours and on discussion boards.
- start studying early for tests. Do review sheet problems.
- explain concepts to yourself and friends (orally using words). Test yourself.
- If you are having trouble focussing your study, please visit office hours for advice.

Part B: University Policies and Statements

Recognition of Mi'kmaq Territory

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

Internationalization

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

Academic Integrity

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

Accessibility

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

Conduct in the Classroom – Culture of Respect

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

Diversity and Inclusion – Culture of Respect

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

Student Code of Conduct

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

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information regarding the Fair Dealing Policy can be found at: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html

Originality Checking Software

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

Student Use of Course Materials

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

Part C: Student Resources and Support

University Policies and Programs

Important Dates in the Academic Year (including add/drop dates): http://www.dal.ca/academics/important_dates.html
Classroom Recording Protocol: https://www.dal.ca/dept/university_secretariat/policies/academic/classroom-recording-protocol.html
Dalhousie Grading Practices Policies: https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html
Grade Appeal Process: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html
Sexualized Violence Policy: https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html
Scent-Free Program: https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html

Learning and Support Resources

General Academic Support – Advising (Halifax): https://www.dal.ca/campus_life/academic-support/advising.html
General Academic Support – Advising (Truro): https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising.html
Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness.html
On Track (helps you transition into university, and supports you through your first year at Dalhousie and beyond): https://www.dal.ca/campus_life/academic-support/On-track.html
Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Indigenous Connection: https://www.dal.ca/about-dal/indigenous-connection.html
Elders-in-Residence (The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit the office in the Indigenous Student Centre or contact the program at elders@dal.ca or 902-494-6803: https://cdn.dal.ca/content/dam/dalhousie/pdf/academics/UG/indigenous-studies/Elder-Protocol-July2018.pdf
Black Student Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html
International Centre: https://www.dal.ca/campus_life/international-centre.html
LGBTQ2SIA+ Collaborative: https://www.dal.ca/dept/vpei/edia/education/community-specific-spaces/LGBTQ2SIA-collaborative.html
Dalhousie Libraries: http://libraries.dal.ca/
Copyright Office: https://libraries.dal.ca/services/copyright-office.html
Dalhousie Student Advocacy Services: https://www.dsu.ca/dsas?rq=student%20advocacy
Dalhousie Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html
Human Rights and Equity Services: https://www.dal.ca/dept/hres.html
Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html
Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html
Faculty of Science Advising Support: https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html

Safety

Biosafety: http://www.dal.ca/dept/safety/programs-services/biosafety.html
Chemical Safety: https://www.dal.ca/dept/safety/programs-services/chemical-safety.html
Radiation Safety: http://www.dal.ca/dept/safety/programs-services/radiation-safety.html
Laser Safety: https://www.dal.ca/dept/safety/programs-services/radiation-safety/laser-safety.html