

Special Topics: Forest Ecology & Management Syllabus

REVISED SEPT 23, 2025


School for Resource and Environmental Studies

ENVI5059 Fall 2025

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.

Course Instructor

Name	Email	Office Hours
Dr. Alana Westwood (pronouns: she/her, online profile) 	a.westwood@dal.ca	Rowe Management Building Rm 5024. Drop in: Tuesdays between 9:15 and 10:00, and 16:00-17:15.

Note contact times as follows:

- Microsoft Teams instant message (**Preferred**): Response time <3 hours on working days (~8:30-16:30, Monday to Friday).
- Email: 1-3 working days. Email will not be monitored evenings, weekends, or statutory holidays

Course Description

This course surveys principles and practices of sustainable forestry in Canada with emphasis on Nova Scotia. Students will learn the basics of forest ecology including ecological succession and the basics of disturbance, including pests, disease, fire, wind, and climate change. Ecology will be synthesized with an introduction to silviculture (the principles of tree growth and regeneration) to better understand historic practices, current activities, and future trends in managing commercial forests and ensuring the integrity of forest ecosystems. The course will entail a number of field trips within transit-accessible locations in the Halifax Regional Municipality where students will learn principles of tree identification, forest health assessment, urban forestry, and Mi'kmaw perspectives on forests. Students will be expected to cover expenses related to transportation for

field sessions. Students will be assessed through a field test of tree identification, participation through field notebooks, and a large final project on self-selected topics related to the science and policy of forest management.

Course Prerequisites

Enrollment in a Master's program. Upper-year undergraduate students may request admission from the instructor.

Course Exclusions

None.

Course Structure

Course Delivery

The course will be delivered from September 2 through December 3, 2025. Course delivery is through a mix of in-person lectures, field trips, guest lectures, and supplemental online material including videos, readings, podcasts, discussions, and other materials.

Field trip attendance is expected, with grades being associated with some assignments completed during field trips. Field trips are in locations accessible by Halifax Metro Transit (students have a bus pass included as part of their tuition), except potentially one optional field trip in a non-transit-accessible location if there is sufficient student interest. One in-field test will occur during a field trip. In-class sessions will be composed of lecture, question and answer sessions with guest speakers, facilitated discussion on required reading material, and opportunities to review assignments and with the instructor. Group work is optional.

Lectures

Mondays, Henry Hicks Building Rm 217, 14:35-17:25 ADT **OR field trips in various locations** (see Course Schedule)

Course Materials

Required Resources

All students will be required to access a copy of Nova Scotia's Forest Ecosystem Classification (FEC) Guide, [which can be found freely online](#). Hard copies will be available for loan.

All students will require a notebook for taking notes in the field. A pocket-sized coil-bound notebook is recommended, with a [Rite-In-The-Rain notebook](#) being the best option (available in-store at MEC, the Trail Shop, or online in various places). Fieldwork will be

proceeding even in the event of rain or snow, so best be prepared! Tip: Use a mechanical pencil and tie it to the coil of your notebook with a string.

Students must have access to the university library as well as a computer or a functional tablet for word processing, and consistent access to the internet. If you require support for the course or university technologies you can contact Information Technology Services (ITS) at 1-800-869-3931 or support@dal.ca



Brightspace® is our classroom space! All supplementary materials (inclusive of text, video, and audio materials) and lecture slides will be provided through Brightspace. This is where you'll find the syllabus, class announcements, course schedule, readings, dropboxes for submitting assignments, and discussion boards for questions. Readings may be provided as little as one week prior to the next class to address current affairs.



MS Teams® is Dalhousie's conferencing platform, and is preferred for messaging the instructor and TA. Should office hours need to be online due to instructor or student illness, Teams video call will be used. Coursework groups can create private channels for storing files, chatting, and organizing meetings.

Required Equipment

Students are expected to bring the following to each field trip:

- Sturdy footwear for light fieldwork (e.g. hiking or walking boots which are water-resistant)
- Appropriate clothing (long pants which are resistant to tears, sweaters, hats)
- Raingear
- Sun and insect protection
- Any needed medications or safety items
- A camera (or phone with a camera)
- At least 1L of water
- Snacks
- Notebook and pencils

Optional Resources

Although a simple field guide will be provided on loan during field sessions, it is **strongly suggested** that you purchase your own field guide to trees of Nova Scotia ([Boland's](#) or [Peterson's](#) or [Farrar's](#) are all good choices). A **compass**, **hand lens**, and **first aid kit** will also be provided on loan, however, you may also wish to purchase your own. All forestry-specific field equipment will be provided on loan.

Students who wish to underpin the course material with foundational texts will find the following helpful. I particularly recommend them to those considering careers in forest research or forestry.

Hunter, M.L. (ed.) (1999). *Maintaining Biodiversity in Forest Ecosystems*. Cambridge University Press. Available [here](#).

Puettman, K.J., Coates, K.D., and Messier C. (2008). *A Critique of Silviculture: Managing for Complexity*. Island Press. Available [here](#).

Simpson, J. (2015). *Restoring the Acadian Forest: A Guide to Forest Stewardship for Woodlot Owners in Eastern Canada*. Nimbus Publishing. Available [here](#).

Assessment

Assignment	Grade Proportion	Due date
1. Fieldbook (must complete 7/9)	15	ongoing
2. Tree ID test (in field)	10	October 27
3. Major project: Addressing a pressing issue in forestry (individual or group)	(70)	
3a. First draft of outline, workplan, and rubric	15	October 17
3b. Peer-review of outline, workplan, and rubric	10	November 7
3c. Presentation	15	December 1&8
3e. Final project	35	December 12

Assignments are accompanied by a detailed instruction sheet and marking rubric on Brightspace. Short summaries are as follows:

Assignment 1. Fieldbook

Each week, students will be asked to respond to a prompt relating to that week's readings content and/or field session by writing a hand-written entry in their field book or submitting an audio reflection. If submitting written work, clear photos or ideally scans of the fieldbook entry are required. Students need only complete 7/9 weeks: the lowest score will be dropped from the student's grade.

Assignment 2. Tree ID test

There will be one test during a field class session, worth ten marks. During a field session, students will be tested on their identification of common trees in Nova Scotia as well as conducting Forest Ecosystem Classifications (FEC) in several forest stands. This test is partly open book: FEC Guides as well as field guides of trees in the region will be provided, or students can bring their own field guides and fieldbooks with instructor approval. Phones, computers, smart glasses, any other electronic devices, or reference specimens may not be used during the test. Cell phones will be placed in a backpack held by the instructor during the test.

Assignment 3. Major project: Addressing a pressing issue in forestry

This assignment may be completed individually or in groups of up to 5 students. Students will complete a synthetic assignment which is broken into four parts. There is considerable flexibility in the topic and execution of this project. Approaches (e.g. report, webpage, art piece, presentation, protocol, map/model) will vary depending on the type of project chosen. Example projects might include:

- Analysing historical archives to produce a publicly available GIS database of culturally important trees in Halifax
- Conducting a systematic literature review on viable economic uses for slash piles
- Working with a local public school to deliver outdoor, age-appropriate instruction on tree identification and urban forests
- Creating an art installation of high-quality printed photographs of different types of forest management in Nova Scotia including exhibit labels explaining the photographs and their context
- Engaging in comprehensive surveys for invasive species such as Hemlock Woolly Adelgid and documenting findings through a technical report and GIS database

Students will be given the opportunity to work as a group with external professionals on a provided topic, or choose their own individual project. If proposing your own project, let the instructor know within the first three weeks of class. The final project is divided into interim deliverables supporting students in the development of their topic, outline, and project plan. Students will peer-review other class members' workplans. Given that each project may be quite different, students will also give input on developing the rubric by which the final submission will be graded. You will also present your final project to the class.

If you are interested in developing the assignment into a published report/galleried piece/web-hosted wiki/peer-reviewed publication or whatever might be appropriate for wider distribution, you will have the ongoing support of the instructor to do so after the course has ended.

Grading

Note that for students in a graduate program, a minimum grade of B- is required to pass the course. This means that a final term grade of under 70% will be assigned an F for all graduate students. Receiving a final grade of F in a graduate program means different things in different programs. In the MREM, a single F results in automatic dismissal from the program with the right to appeal to re-enter the program. Conversion of numerical grades to final letter grades follows the [Dalhousie Grade Scale](#):

A+ (90-100)

B+ (77-79)

C+ (65-69)

D (50-54)

A (85-89)
A- (80-84)

B (73-76)
B- (70-72)

C (60-64)
C- (55-59)

F (0-49)

Course Policies on Missed or Late Academic Requirements

A deduction of 10% will be taken for each day an assignment is late and will not be accepted more than five days after the due date. Arrangements to hand in assignments late due to extenuating circumstances must be made with the instructor at least 48 hours before the assignment is due. All assignments are due at 10:00 PM ADT unless otherwise stated on the assignment instructions. To improve time management skills, visit [Studying for Success](#) for a self-assessment, free workshops, and personal coaching.

Course Policies related to Academic Integrity

Originality checking/plagiarism detection software will be used to ensure academic integrity in this course. When completing individual assignments, students are expected to develop their own original work. The use of generative AI tools such as ChatGPT to complete assignments is not permitted. Any suspected academic integrity violations will be immediately reported to the faculty academic integrity officer, and proven violations may result in dismissal from your university program.

Learning Objectives

Upon completing this course, the student will be able to:

- Understand basic principles of forest ecology and identify common tree species in Nova Scotia;
- Become familiar with disturbance-based forest management and be able to formulate evidence-based recommendations and critical analyses regarding its application in a Canadian and Nova Scotian context;
- Synthesize interdisciplinary perspectives—including ecological, social, political, and economic dimensions—to assess drivers of different forest management approaches and their consequences;
- Collaborate effectively with an external partner organization to address a real-world research or management question, and demonstrate professionalism, and advanced project management to pose new knowledge and solutions;
- Communicate management solutions in formats accessible to a variety of audiences.

Course Content

The course is structured in 12 modules which occur on a weekly basis. The schedule could be subject to further change, particularly the scheduling of guest speakers. You will be informed if there are any changes to the schedule via Brightspace announcements. For information about withdrawal dates and holidays, see [Dalhousie's important dates calendar](#).

Session	Topics	Tasks for the week
Sept 8	CANCELLED DUE TO LABOUR DISPUTE	
Sept 15	CANCELLED DUE TO LABOUR DISPUTE	
Block 1 Sept 22	NO IN PERSON CLASS <ul style="list-style-type: none"> Lecture (VIDEO ONLINE): Intro to the class & forestry; field safety Assignment (VIDEO ONLINE): Introducing Assignment 1 (Fieldbook) Assignment (VIDEO ONLINE): Introducing Assignment 2 (Major project) Assignment (VIDEO ONLINE): Introducing Assignment 3 (Test) 	<ul style="list-style-type: none"> Fieldbook: Fieldwork forms & Get to know a tree Reading: Forest Ecosystem Classification Guide and Acadian forest backgrounders Sign up for Assignment 3 topic
Block 2 Sept 29	<ul style="list-style-type: none"> Lecture (ONLINE): Primer on botany and plant identification FIELD SESSION: Tree ID and Forest Ecosystem Classification (Point Pleasant Park, meet Young Avenue & Point Pleasant Drive) 	<ul style="list-style-type: none"> Fieldbook: Tree ID notes & FEC classifications Reading: The social lives of forests Finalize Assignment 3 topic and connect with group
Block 3 Oct 6	<ul style="list-style-type: none"> FIELD SESSION: FEC and forest health assessment (Hemlock Ravine Park, meet at parking lot on Kent Street) 	<ul style="list-style-type: none"> Fieldbook: Forest health data summaries Reading: Hemlock woolly adelgid
Block 4 Oct 13	<ul style="list-style-type: none"> NO CLASS – THANKSGIVING HOLIDAY Lecture (ONLINE): Primer on forest succession and disturbance 	<ul style="list-style-type: none"> Fieldbook: Forest succession and disturbance Reading: What the trees are telling us Assignment 2a due Oct 17
Block 5 Oct 20	<ul style="list-style-type: none"> Guest lecture & walkabout: Urban forestry in Winnipeg and Halifax (Dr. Richard Westwood, University of Winnipeg) FIELD SESSION (on campus): Tree measurement 	<ul style="list-style-type: none"> Fieldbook: Urban forest inventory Reading: Tree of all trades
Block 6 Oct 27	<ul style="list-style-type: none"> FIELD SESSION: Setting up plots (Frog Pond Park) Assignment 2: Tree ID test 	<ul style="list-style-type: none"> Fieldbook: Wildland forest inventory Complete mid-term course review Reading: Acadian forest management practices
Block 7 Nov 3	<ul style="list-style-type: none"> Lecture: Harvesting and silviculture 	<ul style="list-style-type: none"> Fieldbook: Timber cruise Reading: The glyphosate debate

	<ul style="list-style-type: none"> • Assignment 3: Each individual/group meets with instructor for progress update 	<ul style="list-style-type: none"> • Assignment 2b due Nov 7
	Fall study break Nov 13-18	
Block 8 Nov 17	<ul style="list-style-type: none"> • Lecture: Forest products, wood supply, and economics • Guest panel: Working in forestry in Nova Scotia and the ecological forestry transition (Heba Jarrar, City of Halifax; Emily Woudstra, Nova Scotia Department of Natural Resources and Renewables; Revant Sharan, Ecological Forestry Research Initiative) 	<ul style="list-style-type: none"> • Fieldbook: Wood products at the store • Reading: The lumber industry
Block 9 Nov 24	<ul style="list-style-type: none"> • Lecture: Indigenous and community forestry • Guest lecture: Medway Community Forest Co-op and the NS Working woodlands trust 	<ul style="list-style-type: none"> • Fieldbook: Free-to-grow survey • Reading: First nations and protection of old growth
Block 10 Dec 1	<ul style="list-style-type: none"> • Assignment 3c (presentations) 	
Block 11 Dec 8	<ul style="list-style-type: none"> • Assignment 3c (presentations) • Course celebration (if time) 	<ul style="list-style-type: none"> • Assignment 2d due Dec 12

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/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.

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>