

Faculty of Management Course Syllabus
ENVI 5050.01 (Blended Online/In-Person)
Special Topics: Forest Ecology & Management
Winter 2021

Course Overview

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. If permissible given Covid-19 restrictions, the second half of the course will consist of field sessions held near to Halifax. Students attending remotely will receive instructions for self-guided field trips. In the field, 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 on materials including fact sheets, participation and 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.

Instructor

Dr. Alana Westwood (pronouns: she/her)

Instructor profile: Posted on the course website and www.alanawestwood.com

Contact: Message directly on Microsoft Teams or email a.westwood@dal.ca. I will respond to emails/messages once per weekday, and will **not** respond on evenings and weekends.

Office hours: Held weekly on Wednesdays before class. Make an appointment:

<http://calendly.com/alanawestwood/foreco/>

Discussion forum: Students may ask questions (including anonymously) in the course FAQ on Brightspace.

Phone: Available by request.

Course development assistance

Erin Dann & Kira Chalupa

Erin and Kira are supporting this course through development of lecture materials, identifying materials from diverse creators, and analyzing the online delivery of the course to maximize accessibility and inclusion. Neither are serving a marking function for this course. To contact Erin or Kira, speak to the instructor.

Course Delivery

The majority of course content is delivered asynchronously on Brightspace (dal.brightspace.com) through a mixture of recorded lectures, readings, podcasts, discussion forum posts, videos, and

other materials. **Given rapidly-changing Covid-19 guidelines, students should check the weekly announcement on Brightspace for updated status of synchronous and field sessions.** Emergency updates (e.g. short-notice cancellation of in-person sessions) will be communicated to students via email.

This course has a “slow start”, with only the syllabus and introductions being available in the first week. From **January 13 until February 28**, weekly online **80-minute** synchronous discussions will take place each Wednesday from 14:05-15:30 ADT using Microsoft Teams. **Note that there will be an assigned reflection exercise** in advance of the first discussion.

From **March 1-24**, sessions will **175 minutes and be held outdoors** in locations to be specified by the instructor from 14:05-17:00 ADT. Instructions will be forthcoming for group self-directed field sessions. See the ‘Course Policies’ section for information on field safety. If Covid-19 guidelines in Halifax prohibit in-person outdoor gathering in March and April, these sessions will revert to an 80-minute online format with accompanying self-directed field trips. **The final session of the course (March 31)** will be held online, using Teams, from 14:05-15:30 ADT.

Discussions will be composed of question and answer sessions with guest speakers, facilitated discussion on required reading material, and opportunities to discuss assignments and course expectations with the instructor. Group work is optional for some assignments. Students may coordinate group work as they wish, but a messaging channel and virtual meeting room can be provided for each group in the course space on Teams.

Course Objectives/Learning Outcomes

The student will be able to:

- Understand basic principles of forest ecology
- Identify common tree species
- Be familiar with disturbance-based forest management and how it applies in a Canadian and Nova Scotia context
- Understand the ecological, social, political, and economic drivers behind different forest management approaches
- Knowledge of legislation, policies, regulations, and the tenure system, and how these govern forest management practices in Nova Scotia and elsewhere
- Gain a deep understanding of, and be able to communicate about, a pressing issue in sustainable forest management

Course Materials

Required Resources

All required reading (inclusive of text, video, and audio materials) will be provided through Brightspace. Readings may be provided as little as one week prior to the next scheduled synchronous discussion so as to address current affairs.

All students will be required to access a copy of Nova Scotia’s Forest Ecosystem Classification (FEC) Guides, which [can be found freely online](#). Hard copies will be available for loan during field sessions. Students attending remotely from outside Nova Scotia will be required to use the FEC guide for their location.

All students will require a notebook for taking notes in the field for either instructor-led or self-guided field trips. A pocket-sized coil-bound notebook is recommended, with a [Rite-In-The-Rain](#) notebook being the best option (available in-store at MEC or online in various places). Fieldwork will be proceeding even in the event of rain or snow, so best to use pencil and be prepared! Hot tip: Use a mechanical pencil and tie it to the coil of your notebook with a string.

Students will be provided a PDF of [An Independent Review of Forest Practices in Nova Scotia](#) by Dr. William Lahey (University of King's College) and be expected to read this document in preparation for several class discussions centred on different aspects presented therein.

Students must have access to the university library (libraries.dal.ca) as well as a computer or a functional tablet for word processing, and consistent access to the internet. It is strongly recommended that students have access to a webcam and microphone, as well as sufficient internet or cellular bandwidth to engage in synchronous video discussions.



Brightspace is our classroom space! This is where you'll find the class announcements, weekly modules, video lectures, course readings, dropbox for submitting assignments, and discussion boards for questions and assigned reflections.



Teams is our conferencing platform. Synchronous discussions will happen on Teams, and groups may be designated a channel they can use to organize themselves and conduct meetings. All enrolled students will receive a link to the Teams course space.

Learn more about digital tools available to students [at this link](#). 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

Optional Resources

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](#).

Course Policies

1. Safety is your responsibility. There are inherent dangers involved in any on-site field instruction or self-directed field trips. Students will receive a lecture on field safety and instructions on appropriate clothing and protective equipment.

2. Covid-19 safety is all of our responsibilities. The only face-to-face portion of this class will take place on field trips dates, outside, where students and instructors will maintain physical distancing, wear non-medical masks at all times, and not to share equipment or items. Field sessions may be subject to adjustment based on public health guidelines in the Halifax Regional Municipality at that time. Though physically distanced, masked outdoor activities are low risk, some students may not wish to take this risk and will be provided with alternate (self-directed) field activities. If a student is feeling unwell, is awaiting testing results, or is in mandated isolation for any reason (e.g. exposure, travel), they will not be able to attend in-person field sessions and will be provided with an alternative self-directed activity. When engaging in self-directed field activities, students are expected to observe all locally-mandated Covid-19 guidelines.

3. Attendance and participation are your responsibility. You are expected to attend all synchronous sessions and review all course content, including pre-recorded lectures. Come prepared to engage in discussion with other students and guests. You will regularly be split into subgroups to discuss with other students, and should be prepared by having reviewed lectures and readings for the week.

4. Collegiality. You are expected to treat all classmates and your instructor with collegiality and to treat each person as an equal, independent of any factors relating to their identity.

5. Brightspace. Keeping up to date with the announcements, learning materials, and discussions posted on Brightspace, as well as submitting your assignments through the Brightspace dropbox, is your responsibility.

6. Late assignments. A deduction of 10% will be taken off for each day an assignment is late. 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.

7. Your wellness and inclusion is priority. This course has been designed to the best of the instructor's ability with [principles of universal design](#), which supports accessible education as a default. Access should be proactive and inclusive, with the course designed for all. If the course materials do not meet your access needs, in addition to contacting [Accessibility Services](#), please contact the instructor to discuss alternate arrangements or redesigning course elements. Any conversations with the instructor about accessibility are confidential and are strictly for facilitating learning needs or accommodations.

Course Assessment

Assignment	Grade Proportion	Due date
1. Field tree ID exercise (self-guided)	20	January 31
2. Tree species fact sheet	15	February 14
3. Major project: Addressing a pressing issue in forestry (individual or pair)	(50)	
3a. First draft of outline, workplan, and rubric	5	February 14
3b. Peer-review of outline, workplan, and rubric	10	February 28
3c. Revised outline, workplan, and rubric	5	March 14
3d. Final project	30	April 16
4. Weekly discussion + field notebook	15	March 31
Bonus assignment: TBD (to be determined collectively by class)	+2	As agreed with instructor

All assignments are due at 10:00 PM Atlantic Daylight Time unless stated otherwise on the assignment instructions. All assignments are accompanied by a detailed instruction sheet, verbal instructions, and a marking rubric on Brightspace. Short summaries of the assignments are as follows:

Assignment 1. Field tree exercise

Each student will independently complete a self-directed field exercise to learn to identify twelve tree species in their home region. Students will fill out a provided template (one page per species) including the tree's location, photographs of identifying features, and lists of identifying features. Finally, the location of each tree must be provided on a georeferenced map.

Assignment 2. Tree species fact sheet

Each student will independently choose an economically and/or culturally-important tree in their home region and develop a two-page fact sheet detailing the tree's botanical, biological, economic, cultural, and ecological aspects. Each student must choose a different species or cultivar.

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

This assignment may be completed individually or in groups of up to 3 students. Students will complete a synthetic assignment worth 50% of their grade. There is considerable flexibility in the topic and execution of this project. Students will be provided with a list of cutting-edge challenges in sustainable forestry and may choose from one of these or propose their own.

Students will also have the opportunity to work with external professionals on a topic or research question if they so choose. Though most students will likely opt to write an original research paper, other approaches may include a systematic literature review, a public outreach project, or an art piece. Students should begin thinking about potential project ideas while reviewing course material. 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
- Writing an original research paper which collects either field or GIS data to audit requirements for stand retention against what was actually left in a site
- Engaging in comprehensive surveys for invasive species such as Hemlock Woolly Adelgid and documenting findings through a technical report and GIS database
- Writing a monograph which gives a socio-ecological profile of a forest resource-reliant community

Students will be given the opportunity to work with external professionals on a pre-selected topic, or choose their own. The final project will include a number of interim deliverables supporting students in the development of their topic, outline, and project plan. Given that each project may be quite different, students will also have the opportunity to have input in developing the rubric by which the final submission will be graded.

If students 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, they will have the ongoing support of the instructor to so after the course has ended.

Assignment 4. Participation: Weekly reflections and discussion attendance

Each week, students will be asked to respond to a prompt in the Brightspace discussion forum relating to that week's readings. For the weeks that correspond with field sessions and self-directed field trips, the answer to the prompt will involve uploading a photo from the relevant portion(s) of the field book. To gain full marks, students must provide a direct response to the prompt as well as reply to the posts of one or more students for **eight** of a possible **ten** weeks. Quality of contribution will not be marked—simply a yes/no record of participation will be taken.

Bonus assignment: To be determined by class

During the first synchronous discussion, the class will decide the content of a bonus assignment intended to support and maintain ongoing connections between students attending in-person field sessions and those engaging in self-directed field exercises. The bonus assignment may include a range of activities including but not limited to taking and editing video, sharing summaries and notes, introducing guest lecturers, or compiling field-collected data.

Grading

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale. Note that for students in a **graduate program, a minimum grade of B- is required** to pass the course. In other words, 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.

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)		

Course Schedule

The course is structured in 12 modules which occur on an approximately weekly basis. The schedule below could be subject to further change, particularly in relation to the scheduling of guest speakers. Planned discussion topics may also be substituted with newsworthy issues without warning. You will be informed ASAP if there are any changes to the schedule via Brightspace announcements.

Session	Topics	Tasks (check Brightspace for details)
Pre-course Jan 6-10	1. Introduction to the course syllabus	<ul style="list-style-type: none"> • Discussion: Setting course norms (Discussions due weekly until last day of classes)
Block 1 Jan 11-17	2. Introduction to your instructor and the course outline 3. Ecosystems and approaches to management in Canadian & Nova Scotia forests	<ul style="list-style-type: none"> • Online session (Jan 13): 1. Introductions, 2. Discussion: Classroom norms and logistics, 2. Brief introduction to bonus assignment, 3. Introducing Assignment 1 (Tree ID), 4. Introducing Assignment 4 (Class discussion + field notebook)
Block 2 Jan 18-24	4. Primer on forest ecology 5. Forest succession and climate change (Anthony Taylor, Canadian Forest Service [CFS])	<ul style="list-style-type: none"> • Online session (Jan 20): 1. Introducing Assignment 2 (Fact sheet), 2. Finalizing Bonus Assignment, 3. Discussion: Lahey Report • Sign up for a tree species for Assignment 2
Block 3 Jan 25-31	6. Primer on disturbance 7. Insects & forests 8. Forest diseases	<ul style="list-style-type: none"> • Online session (Jan 27): 1. Q&A with Anthony Taylor; 2. Introducing Assignment 3; 3. Discussion: Social life of forests • Last day to drop winter term classes without a W (Jan 29) • Assignment 1 due Jan 31
Block 4 Feb 1-7	9. Ecological forestry in Nova Scotia (Mary Jane Roger, Medway Community Forest Co-op) 10. Canadian forest governance and inclusion and diversity (Felicitas Egunyu, CFS)	<ul style="list-style-type: none"> • Online session (Feb 3): 1. Discussion of Assignment 3; 2. Guest lecture from Dr. Heather Cray on field safety, 3. Discussion: The Lahey Report and NS forest management guide public consultation
Block 5 Feb 8-14	11. Wood and wood products 12. Land tenure & stumpage 13. Cumulative effects and forestry (Effah Antwi and Sonja Kosuta, CFS)	<ul style="list-style-type: none"> • Online session (Feb 10): 1. Q&A with Mary Jane Roger and Felicitas Egunyu; 2. What to do with Assignment 2 and the Bonus Assignment • Peer review selection • Assignment 2 due February 14 • Assignment 3a due February 14

Break Feb 15-21	No class	
Block 6 Feb 22-28	<ol style="list-style-type: none"> 1. Primer on forest harvesting and silviculture 2. Woodlots and forest management (Jane Barker, Mersey-Tobeatic Research Institute) 	<ul style="list-style-type: none"> • Online session (Feb 24): 1. Q&A with Jane Barker, Effah Antwi, and Sonja Kosuta; 2. Logistical prep for field sessions; 3. The Lahey report YET AGAIN: Cutting systems and land management • Complete mid-term course review • Assignment 3b due February 28
Block 7 Mar 1 -7	<ol style="list-style-type: none"> 3. Basics of tree identification 4. Introduction to Forest Ecosystem Classification 	<ul style="list-style-type: none"> • Field session (March 3): Point Pleasant Park
Block 8 Mar 8 - 14	<ol style="list-style-type: none"> 5. Forest health assessment (Jane Barker and Colin Gray, Mersey-Tobeatic Research Institute) 	<ul style="list-style-type: none"> • Field session (March 10): Hemlock Ravine Park • Assignment 3c due March 14
Block 9 Mar 15 - 21	<ol style="list-style-type: none"> 6. Mi'kmaw perspectives in forestry (shalan jaudry, L'sitkuk/Bear River First Nation) 	<ul style="list-style-type: none"> • Field session (March 17): Location TBD
Block 10 Mar 22-28	<ol style="list-style-type: none"> 7. Urban forestry (Peter Duinker, Dalhousie University) 	<ul style="list-style-type: none"> • Field session (March 24): Meet at the Robert Burns statue at the north end of Victoria Park (South Park & Spring Garden)
Block 11 Mar 29 - term end	<ol style="list-style-type: none"> 8. Any unfinished content 	<ul style="list-style-type: none"> • Online session (March 31): Wrap up Q&A with William Lahey; Course celebration • Assignment 3d due April 16

Policies and services

Accessibility

Though this course has been designed with universal principles, students still may face barriers to success related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. The full text of Dalhousie's Student Accommodation Policy can be [accessed at this link](#). Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the **Student Accessibility Centre** prior to or at the outset of the regular academic year. Find more information and the **Request for Accommodation** form [online](#).

Student health and wellness

Your health and wellness is a priority. Students in Halifax should be aware of the in-person [Student Health and Wellness Centre](#) where you can see doctors, nurses, psychiatrists, counsellors, and other health professionals. Counselling is provided free of charge to Dalhousie students.

Completing a full courseload involves a great deal of screen time on computers and other devices, which may be stressful for some students' physical and mental well-being. Free text-to-speech/speech-to-text software, Read and Write Gold, is available through Dalhousie's [software library](#). Students may wish to consider using this or similar software to convert long readings to audio or to write first drafts of papers by dictation.

The Student Accessibility Centre also has a [Lending Library](#) which includes technology resources that may ease eyestrain, improve audio quality, improve seated ergonomics, or make it possible to work effectively in unavoidably noisy study spaces. Examples include tablets, noise-cancelling headphones, a portable text-to-speech pen, recording devices, and more.

Academic integrity

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

The Academic Integrity website (<http://academicintegrity.dal.ca>) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. Any paper submitted by a student at Dalhousie University may be checked for originality to confirm that the student has not plagiarized from other sources. Plagiarism is considered a very serious academic offence that may lead to loss of credit, suspension or expulsion from the University, or even the revocation of a degree. See the [full text](#) of Dalhousie's **Policy on Intellectual Honesty and Faculty Discipline Procedures**. You should be familiar with the [Faculty of Management Professor and Student Contract on Academic Integrity](#), and it is your responsibility to ask questions if there is anything you do not understand.

Dalhousie offers many ways to learn about academic writing and presentations so that all members of the University community may acknowledge the intellectual property of others. Knowing how to find, evaluate, select, synthesize and cite information for use in assignments is called being

“information literate.” Information literacy is taught by Dalhousie University Librarians in classes and through online tutorials.

Do not plagiarize any materials for or from this course. For further guidance on what constitutes plagiarism, how to avoid it, and proper methods for attributing sources, see [these resources](#). If you suspect cheating by colleagues or lapses in standards by a professor, you may use the confidential email: managementintegrity@dal.ca which is read only by the Assistant Academic Integrity Officer.

Student code of conduct

Dalhousie University has a [student code of conduct](#), and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general:

“The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect

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

Other services available to students

The following campus services are available to help students develop skills in library research, scientific writing, and effective study habits, as well as to connect with other students to support both coursework and campus life. The services are available to all Dalhousie students and, unless noted otherwise, are **free**.

[Academic advising](#) – Support for understanding degree requirements and academic regulations. Academic advising can support you through academic or other difficulties and ensure you meet your educational or career goals.

[Black student advising centre](#) – Provides support for Black students including scholarship and bursary information as well as a directory of Black student societies and groups and related events. Also provides a physical space for Black students to study and network.

[Dalhousie's libraries](#) – Beyond simply being a place to do online or in-person research, librarians advice on search methods, support you with finding materials to complete assignments, and help you reference your work correctly. You can also book a computer, study room, or space for group work in the library.

[Dalhousie Student Union societies](#) – Peer support and team-building is an essential part of the university experience. With over 250 active societies, students can meet others with mutual interests or identities. Student societies can be of particular importance for those who may face identity-related barriers to the university experience.

[Indigenous student centre](#) – Provides support for Indigenous students including regular smudging, scholarship and bursary information, and orientations and other events. Also provides a physical space for Indigenous students to study and network. 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, 1321 Edward Street, or email elders@dal.ca.

[International student centre](#) – Provides support for international students including one-on-one mentorship and guidance for university life Canada. Also provides information for domestic students wishing to study abroad.

[South House](#) – A full-time gender justice centre which provides support to those of marginalized sexual and/or gender identities, including LGBTQ2S+ identities and beyond. Offers space for relaxation or studying, a community computer, and a vast library. Regularly offers workshops and educational events relating to gender justice and sexual and gender diversity.

[Writing Centre](#) – Provides free coaching/tutoring to support any assignment with a written component, ranging from a graduate thesis to a poster to an annotated bibliography and anything in-between. Students will be paired with a tutor from the same discipline who can assist with discipline-specific writing conventions and referencing. The Writing Centre also provides free workshops and comprehensive resource guides.