



Welcome to Field School

Faculty of Science Course Syllabus

Department of Earth and Environmental Sciences

ENVS 3001 - Environmental Science Field School

August 22 – September 2, 2022

Instructor: Dr. Sue Gass *email: susan.gass@dal.ca* *Office location: LSC 809*

Office Hours: I will see you every day during the course and therefore I don't hold typical office hours. If there is something you would like to discuss outside of class time please send me an email and we can arrange a time to meet.

Teaching assistants: TBA

Course delivery: This is a field course which will take place in person on campus, with daytime field trips from campus, and a four-night camping trip to Kejimikujik National Park.

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people¹.

We acknowledge the histories, contributions, and legacies of the African Nova Scotian people and communities who have been here for over 400 years.

Statement of Respect

Students in this class are encouraged to speak up and participate during class meetings and outings. Because the class will represent a diversity of individual beliefs, backgrounds, and experiences, every member of this class must show respect for every other member of this class.

¹ "Acknowledging territory shows recognition of and respect for Indigenous Peoples. It is recognition of their presence both in the past and the present. Recognition and respect are essential elements of establishing healthy, reciprocal relations. These relationships are key to reconciliation" (CAUT Guide to Acknowledging Traditional Territory, 2016). Please take some time to learn more about reconciliation. We will be discussing this further in the course.

Course Description

Credit Hours: 3

Daily field trips introduce methods used to research environmental processes at diverse sites within Nova Scotia. Involves full-day trips from Halifax and a four night/five-day camping trip to Kejimikujik National Park. Offered during the last 2 weeks before Labour Day.

This course will help you develop the expertise you need on your journey to becoming Environmental Scientists. You will learn and practice a range of field methods used by Environmental Scientists, while also considering the Indigenous ways of living in nature. You will meet several Environmental Science professionals (ask them lots of questions), and you will participate in teams and work on your organizational skills. I hope you will also develop a deeper connection with the natural environment in Nova Scotia and with your classmates, TAs, and instructors.

****We will be collecting data which will be shared with the Medway Community Forest Co-op.****

Course Prerequisites - ENVS 2100 and must be an ENVS major or double major student

Course Objectives/Learning Outcomes

- Demonstrate best practice for writing field notes
- Identify relevant ethical issues when conducting field research with wildlife
- Describe a range of field methods used to monitor biological populations
- Carry out standard methods used to describe forest ecosystems
- Implement two-eyed seeing into our Environmental Science work
- Create a taxonomic key
- Conduct CABIN Standard Field Procedures
- Use a compass and GPS
- Describe the benefits and objectives of Canada's National Parks
- Work effectively in a team
- Analyze field data
- Write a technical report

Course Materials

East Coast Trees and Shrubs – J.C. Domm (2021) - **Required** – available at the Dal SUB Bookstore

Elapultiek – shalan joudry (2019) - **Optional** – available at the Dal SUB Bookstore

Readings will be provided on-line through Brightspace. Required reading for the field trip will be printed in a course pack for you. All announcements and changes to the schedule will be posted on Brightspace.

Please check the Brightspace site daily

Course Assessment – This is the work that will help you develop your expertise as an Environmental Scientist

- Quizzes: 15%
- Participation: 15%
- Field notebooks (individual): 10%
- Field report (group): 30%
- Assignments: 30%

Quizzes – 15%

You will have four quizzes. Three will test your knowledge of the assigned readings. A fourth quiz will test your ability to identify native coniferous trees.

Quiz	Value %	Due Date	Type
1 – Field notes and field safety	3	August 22	Multiple choice 10 questions
2- Welfare & Ethics	6	August 23	Multiple choice 30 questions
3 - Native Coniferous Tree	3	August 26	Test on live trees
4- Sampling Static Organisms	3	August 27	Multiple choice (open book)

Participation – 15%

Much of this course involves learning by doing and thus you must actively participate in all the course activities in order to learn as much as you can throughout the course. In addition, environmental scientists do not work in isolation; therefore, working effectively with others is a valuable skill to develop. The following parameters will be assessed for the participation portion of the grade:

- Participating willingly in activities and allowing others to participate
- Asking questions, responding to questions
- Being familiar with the readings
- Providing ideas, helping to solve problems
- Being punctual and courteous
- Being safe
- Respecting the contributions of others in the course

Field Notebooks – 10%

The notes you take in the field are an extension of your memory. No matter how much you think you will be able to remember some of the remarkable observations made in the field, your memory fades with time. Your field notebooks play an important role in recalling detailed information from the field, including specific data you collect, and they must be legible and organized so a colleague will also be able to interpret your notes. It is therefore extremely important to have well organized and detailed field notes.

Your notes should demonstrate a clear understanding of the objective of each field excursion. They should provide details on the date, time location and weather associated with each stop that we make. You should provide a sketch and/or reference to photos for each site depending on which is appropriate. Your notes should contain details on the procedures used during any data collection; relevant observations and data should be clearly and consistently recorded. Each exercise should end with a summary statement – try referring to the readings where appropriate, add in any yet unanswered questions, predictions, next steps or tips for next time. Your notebooks will be collected on **Friday September 2nd** when we meet as a class and given a grade based on the following criteria:

- Statement of purpose (2)
- Date, Time, Location, Weather (1)
- Selectivity (1)
- Methods (1)
- Sketch Maps/Photos (1)
- Summary statements/questions (2)
- Neatness/organization/consistency (2)
- Total /20

Field Assignments – 30%

Assignment	Value %	Due Date	Group/Individual
Orienteering challenge	5	Due August 24 th (start of day)	Group
CABIN protocol	5	August 24 th (end of day)	Group
Dichotomous key	5	August 27 th (start of day)	Individual
Risk assessment	5	Various Dates	Group
Elapultiek	10	September 2 nd (in class)	Individual

Coniferous Trees of NS Dichotomous Key – 10%

Each student will create their own dichotomous key for the ten species of coniferous trees native to Nova Scotia. Your identification guide will include your own photographs, sketches and

descriptions for each of the ten species. We will be using the Twine gaming software to create your interactive key. However, each guide should include the following components:

- ✓ Photographs displaying the unique features of each species include the needle arrangements.
- ✓ If you are not able to find a cone to photograph, then a sketch the tree's cone based on an image of the cones in one of the available field guides.
- ✓ A sketch the tree's silhouette.
- ✓ A short-written description for each species. The description should be based on your interpretation of the defining features of each species and any hints or tips that you find helpful.

You will be graded on whether your photographs match the correct species, organization, creativity, ease of use, and the extent and accuracy of the information you have provided for each species.

Field Reports – 30%

Each group will be responsible for using their field notes to write a summary of each field exercise that we conduct while we are on the five-day field trip. Detailed instructions for the report can be found on Brightspace. The final Reports are due on **Friday September 2nd at 1 pm.**

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)		

Course Policies

Attendance every day is mandatory. A missed class is very serious. Each unexcused absence will result in a deduction of 15% from your final grade in addition to any missed assignments. Being late for class will also lead to deduction in participation marks, and we will not wait for late students if we are leaving on a field trip. If you are feeling unwell, exceptions can be made. Please let us know as early as possible if you are staying home because of sickness. The instructor will provide an opportunity to make-up some missed assignments due to illness. However, if too many days are missed due to sickness, it may become difficult to complete the course. A student must attend the overnight field trip to complete the course.

Late assignments

It is important to stay on top of the assignments and quizzes in this course as it is a fast-paced course where we cover a lot in two weeks. If you are unable to complete an assignment on time, please get in touch with the instructor as soon as possible to discuss your late submission options. If you require academic accommodations, please let contact the student accessibility centre well before the start of the course to work out your accommodations.

Quality of work

Sometimes field school may feel informal because we are working outdoors and having fun, but that does not mean that we do not expect a high level of achievement with each quiz/exercise/report/field notes. Please keep in mind that you are working towards becoming a professional Environmental Scientist, who will be able to effectively work in a team, accurately record field observations, and communicate clearly orally and in writing, so now is a great time to hone these skills.

University Policies and Statements

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

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

Statement: <http://www.dal.ca/cultureofrespect.html>

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

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

<https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=117&chapterid=-1&topicgroupid=31821&loadusercredits=False>

University Grading Practices

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

Resources and Support

Advising

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

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

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

Black Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

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

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

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

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

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

Other supports and services

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

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

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

Safety

Research Lab Safety https://www.dal.ca/content/dam/dalhousie/pdf/dept/safety/lab_policy_manual_2007.pdf

Biosafety: <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

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Safety

Biosafety: <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

Dalhousie COVID-19 information and updates: <https://www.dal.ca/covid-19-information-and-updates.html>