

Environmental Science Capstone Syllabus

Department of Earth and Environmental Science

ENVS 4100 Winter 2026



Dalhousie University operates in the unceded territories of the Mi'kmaw, Wolastoqey, and Peskotomuhkati Peoples. These sovereign nations hold inherent rights as the original peoples of these lands, and we each carry collective obligations under the Peace and Friendship Treaties. Section 35 of the Constitution Act, 1982, recognizes & affirms Aboriginal and Treaty rights in Canada.

We recognize that African Nova Scotians are a distinct people whose histories, legacies, and contributions have enriched the part of Mi'kma'ki known as Nova Scotia for over 400 years.

Course Instructor(s)

Name	Email	Office Hours
Jessica Beaudette	j.beaudette@dal.ca	By appointment*
Brynette Thompson	brynnethompson@dal.ca	By appointment
Christopher Randall	christopher.randall@dal.ca	By appointment

* preferred method of communication with your instructor is via Microsoft Teams instant message. Once an office hours appointment time is agreed upon, students will send the instructor an Outlook calendar invite.

Please note contact times as follows:

- Microsoft Teams instant message: Response time < 12 working hours (7:30-15:30, Tuesdays to Fridays).
- Email: 1-3 working days.
- Responses from Prof Beaudette will be delayed on Mondays due to work/research obligations. Teams/email will not be monitored on weekends or statutory holidays.

Course Description

Students apply the multidisciplinary knowledge they have acquired during their program of study to real world environmental issues. Students work individually and in groups in preparation towards a formal debate. They evaluate evidence from science, economics, philosophy and other ways of understanding the world to develop mastery and nuance among current environmental topics.

Course Prerequisites

ECON 1101.03 or ECON 1102.03), PHIL 2480.03, STAT 2080.03, ENVS 2100.03, ENVS 3200.03, and ENVS 3501. Must be a fourth-year student.

Course restrictions: E1, E2, E3

Course Structure

Course Delivery

The course will be delivered from January 6 through April 10 Fri. In-person seminar and discussion in Studley MONA CAMPBELL BUILDING 1108.

Course delivery will be interactive through a mix of in-person lectures from your instructor, in-person guest lectures, lecture activities, group discussions, student presentations, and debates. Supplemental online material will include videos, readings, podcasts, discussions, and other materials.

Since we will be learning actively in class, attendance is paramount. Attendance to each group presentation and debate is required. If you must miss a presentation/debate class, inform the instructor in advance so accommodations can be made for your group to present/debate in a different time slot. Not being present for your group's presentation/debate will result in a zero on that assignment.

Group work will be required. Students may coordinate group work as they wish, but a messaging channel and document storage space/virtual meeting room can be provided for each group in Microsoft Teams if needed.

While we intend to meet in-person for the duration of the semester, classes may need to be delivered online when required by the University. For online instruction, a laptop equipped with a microphone and camera will be required. These online meetings will be through Microsoft Teams. Students are expected to log on with their cameras turned on for the duration of classes and attendance will be taken.

Lectures

Wednesdays and Fridays, Mona Campbell Building Rm 1108, 14:35-15:55

Course Materials

Required Resources

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 (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, drop boxes for submitting assignments, and discussion boards for questions. Readings may be provided as little as one week prior to the next scheduled synchronous discussion to address current affairs. Students are expected to log into the class Brightspace site at least once per week.

 MS Teams is our conferencing platform. Should circumstances require us to switch to an online format, all students will be added to a Teams page for online classes.

There are no textbooks for this course. Student are expected to access videos and readings listed in the course schedule through Dalhousie University library system.

Optional Resources

Students may find the following textbook useful. It is not necessary to purchase a copy as Dalhousie has a free e-book available for students (available through libraries.dal.ca).

Dalton, Philip and John R. Butler. *Public Policy Argumentation and Debate: A Practical Guide for Advocacy*. (PPAD) New York, USA: Peter Lang Inc., 2015.

Learning Objectives

This course will encourage students to:

- Develop deep knowledge in a specific topic or issue in environmental science
- Apply and integrate knowledge/skills from prior courses in ENVS and other subjects
- Learn skills and tools for developing an argument or position on a specific environmental topic or issue; skills include evaluating evidence, realizing the limitations of evidence, and crafting an argument from evidence
- Identify key challenges faced by environmental decision makers, such as the scope and boundaries of the challenge to frame the debate statement
- Dissect current environmental debates and discuss their scientific basis including controversies and uncertainties
- Practice oral presentation and teamwork skills

Assessments

Task	Due Date	% of final grade
1. Academic Reflection	January 11	5%
2. Elevator Pitch	January 18	10%
3a. Cover Letter & Resume Draft	January 25	5%
3b. Cover Letter & Resume Final	February 1	15%
4a. Information Interview Proposal (plus TCPS ethics certificate)	February 8	5%
4b. Information Interview Reflection	February 15	5%
4c. Group Career Toolbox (Group of 3)	March 1	10%
5. Briefing Note	March 8	15%
6a. Group Debate Project (Group of 4)	March 18-29	23%
6b. Peer & Self Evaluation and Reflection	April 8	2%
Participation & Attendance		5%
SLEQ Form *bonus*	April 8	1%*

*≤ 75% of class must fill out SLEQ form to get bonus

Assessment Descriptions

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: Academic Review Worksheet (5%): This worksheet is designed to help you think critically and personally about your expanding understanding of environmental science. Your answers should clearly demonstrate how you have reflected on these questions as an environmental studies student over the past few years. Citations from outside scholarly or reputable sources should support your answers. Entries should show critical engagement, synthesis of ideas, and emerging professional reflection on what it means to practice environmental science in a complex and changing world.

Assignment 2: Elevator pitch (10%)

Effective communication is a workplace skill that is highly valued by organizations across sectors, including in environmental spaces. An 'elevator pitch' is a brief dialogue/speech that conveys a key idea in the time it takes to ride an elevator, often used to make a first impression on a potential employer. A well-crafted pitch demonstrates one's ability to communicate complex ideas in a clear, concise, and engaging manner. In this assignment, you will learn how to deliver a 1-minute elevator pitch to the class on a past, current, or potential future research topic. 2% of elevator pitch is class workshop and feedback and 8% is the written pitch.

Assignment 3a and 3b: Cover Letter & Resume Draft and Final (20%)

You will write a Resume and Cover Letter for an environmental position you find on a job site or a position you create. The title and job description of the position will be attached to the assignment. Drafts are 5% and final submission is 15%.

Assignment 4a, 4b, 4c: Professional Career Interview Proposal, Reflection and Toolbox (20%)

Career alignment with one's personal values can increase job fulfilment and lower odds of experiencing stress, burnout, or feelings of disconnection. Career opportunities are diverse for students graduating with a Bachelor of (Environmental) Science, with potential alignment and misalignment with personal values across different sectors. Working professionals can offer firsthand insights into the daily responsibilities, challenges, and rewards of a career in the environmental field. In this assignment, you will conduct an information interview with a working professional and write a 500-word short reflection on your own career interests and values. Then form groups to generate a 'toolbox' of skills to succeed in the workplace. Proposal is 5%, the Interview and Reflection are 5%, and the Toolbox is 10%.

Assignment 5: Briefing note (15%)

Briefing notes play a critical role in the workplace by providing concise, organized, and relevant information to decision-makers to understand the implications, risks, and benefits associated with proposed strategic directions (e.g., changes in policy, stakeholder communication, advocacy campaigns). By designing an effective briefing note, you will become familiar with one of the most common techniques for science/policy communication in fields such as environmental consulting, public outreach and education, environmental impact assessment, wildlife management, emergency response planning, and many more.

Assignment 6: Topical Debate and Reflection (25%): This culminating capstone project requires your group of four to identify and address a recognized debate or contested issue in environmental science (e.g. ecological restoration vs. rewilding, carbon offsets vs. direct emissions reduction, individual vs. systemic responsibilities in climate action, place-based vs. techno-centric conservation approaches, etc.). Building on the strategies learned in our debate workshop, your task is to illuminate the core scientific, ethical, and political tensions surrounding your chosen issue and communicate them persuasively, responsibly, and with attention to framing. The debate teams should navigate the debate's complex and contentious terrain by presenting multiple perspectives and forms of evidence involved in that debate, while also articulating a constructive path forward. The presentation will remain **within 30 minutes**. This assignment is a scholarly and analytical exercise demonstrating how environmental arguments are constructed, with specific framings aimed to be persuasive, influencing public engagement and policy outcomes. Your goal is to demonstrate your ability to think critically, argue ethically, and communicate strategically as early career environmental professional. Debate is 23% and Peer/Self Evaluation and Reflection is 2%.

Participation (5%): This grade will include participating in the elevator pitch workshop, the debates, and class discussions (3%). The remaining 2% will be class attendance.

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)	B (73-76)	C (60-64)	F (0-49)
A- (80-84)	B- (70-72)	C- (55-59)	

Course Policies on Missed or Late Academic Requirements

All assignments are due at 11:59 PM Atlantic Time unless stated otherwise on assignment instructions. A deduction of 10% will be taken off 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. To improve time management skills, visit [Studying for Success](#) for a self-assessment, free workshops, and personal coaching.

Course Policies related to Generative AI

The use of generative AI tools (e.g., ChatGPT) for coursework tasks, in part or in whole, in ENVS 4100 is **prohibited** (except for the “Hemingway” App for the elevator pitch assignment – see instructions). **Using these tools to complete all assignments** (other than the elevator pitch) **will be considered academic misconduct**. The use of Generative Artificial Intelligence (AI) is an evolving issue. AI will have legitimate uses in student’s future careers and personal lives, but it is also has serious repercussions. These include the significant environmental footprint of AI – especially overconsumption of freshwater and energy resources.

AI can diminish fundamental skills in writing and critical thinking, skills that your university courses are designed to help you develop. Using AI (including ChatGPT, Grammarly, Scholarcy, etc.) to write or summarize work not only exposes students to copyright infringements (see below), but also diminishes student practice and mastery of skills which are fundamental to learning and career progression. Generative AI tools will plagiarize directly from other sources. As a result, Generative AI tools often produce works which are improperly cited (including creating false citations, plagiarism, failing to cite sources or otherwise make appropriate attribution) and include erroneous information. Merely rewording an AI composition does not make it an original work.

Students are responsible for submitted work, and advances in Generative AI technologies do not alter this accountability. As Generative AI cannot take responsibility for what it produces, including intellectual property and copyright infringements, students using AI may face allegations of perpetuating false or misleading information, infringement of intellectual property rights, violating the conditions of research ethics approval, research misconduct, infringement of privacy rights, or other issues that carry academic, civil, or criminal penalties.

Using AI tools to summarize documents may violate copyright laws. Uploading someone else's intellectual property into a generative AI tool without their permission is considered theft. This includes the assignment instructions, lecture slides, and other materials that have been developed by your instructor(s). This may also include academic journal articles, data, unpublished papers, videos, exams, quizzes, textbook chapters, etc. and assignments completed by other students.

Using AI tools removes the most critical component of working in environmental science and conducting team-based research – human relationships. AI will never be human. Only your unique voice and passions can truly enliven the work and life you choose. This course encourages and facilitates genuine connections with both the natural world and our communities (academic, professional, and personal). We are here to support each other!

Course Content

The course is structured as a series of classroom lectures and activities which are held on a weekly basis. The schedule is subject to further changes, particularly the scheduling of guest speakers or possible 'snow days'. You will be informed of schedule changes via Brightspace announcements.

Class	Date	Lesson Topic(s)	Readings before class / Assignments
Week 1	January 7	Introduction to the Class CE: Contemplative Education and the Scientific Method	<ul style="list-style-type: none"> • Read the syllabus on Brightspace • Read Contemplative Practices in Science • Learn More: Contemplative Mind
	January 9	What do we know as we come to the end of an Environmental Science degree program? CE: Deep Listening How to: Give and take constructive feedback	<ul style="list-style-type: none"> • Review core courses you took in your ENVS degree program • Read Institution of Environmental Sciences (2021) pages 1-58. Transforming the planet: Our vision for the future of environmental science • Read: The Power of Deep Listening • Assignment: Academic Review "survey" due January 11 (open until Jan 22 11:59pm - drop date)
Week 2	January 14	Elevator Pitch Workshop	<ul style="list-style-type: none"> • Elevator Pitch Worksheet • See concept map example
	January 16	Elevator Pitch Presentations Evidence in decision-making	<ul style="list-style-type: none"> • Elevator Pitch Presentations TODAY in class • Assignment: Written Elevator Pitch due Jan 18 (open until Jan 22)
Week 3	January 21	ENVS Careers (Guest lecture: Alana Westwood)	<ul style="list-style-type: none"> • Read Chapman et al. (2015): Being relevant: Practical guidance for early career researchers interested in solving conservation problems
	January 23	Environmental Work: Eco-anxiety, Eco-grief and Optimism	<ul style="list-style-type: none"> • Cunsolo and Ellis 2018 Ecological Grief as a Mental Health Response to Climate Change (Access through Dal Library) • Gerber et al. 2023 Practicing Mindfulness in Addressing the Biodiversity Crisis • Assignment: Cover Letter & Resume DRAFT due January 25

Week 4	January 28	Resume/CV and cover letter workshop (Guest Lecture: Kaitlin Burek – Dal Career Center)	<ul style="list-style-type: none"> Review feedback on your Resume and Cover Letter draft assignment, revise and bring updated draft to class
	January 30	-Journalism, Creative Non-Fiction	<ul style="list-style-type: none"> Read Beaudette 2025 Natural World Heritage Sites Under Threat but Bright Spots Remain. Assignment: Cover Letter & Resume FINAL due February 1
Week 5	February 4	Activism: Save Owls Head (Guest lecture: Kristina Boerder)	
	February 6	How to: Information Interviews Workshop	<ul style="list-style-type: none"> Assignment: Information Interview Proposal due Feb 8
Week 6	February 11	Career Panel – Dal Postdocs	<ul style="list-style-type: none"> Finish interviews this week!
	February 13	-Advocacy in practice -Group Career Toolbox Workshop	<ul style="list-style-type: none"> Assignment: Information Interview Reflection due Feb 15
Week 7	February 18	READING WEEK	
	February 20	READING WEEK	
Week 8	February 25	How to: Interdisciplinary Team Science Science communication (Guest Lecture: Eva Carmichael)	<ul style="list-style-type: none"> Read: Tucker (2925) Reciprocity: Rethinking our Relationship with the Natural World (about Serviceberry by Robin Wall Kimmerer) Read Robertson et al (2023): Interference in science: scientists' perspectives on their ability to communicate and conduct environmental research in Canada
	February 27	How to: Policy briefs Writing Workshop Briefing Note	<ul style="list-style-type: none"> Assignment: Group Career Toolbox List due March 1
Week 9	March 4	Briefing Note Draft Workshop Values in science Debate Topics/Groups Finalized	<ul style="list-style-type: none"> Briefing Note Draft (optional) bring to class March 4 Read Introduction: Elliott 2017 A Tapestry of Values

	March 6	How to: Debate (Pt. 1) Identify environmental science debates	<ul style="list-style-type: none"> Assignment: Briefing Note due March 8
Week 10	March 11	Group work: Framing the conversation & debates in environmental science	<ul style="list-style-type: none"> Read: Dan Zak, How should we talk about what's happening to our planet? Washington Post. Aug 27, 2019 (access through Dal Libraries)
	March 13	How to: Debate (Pt. 2) In class group work and meetings with professor	
Week 11	March 18	Debate preparation: opening arguments	
	March 20	Debate preparation: rebuttals	
Week 12	March 25	Debate Presentations (2-3 groups)	<ul style="list-style-type: none"> Group Assignment Due (if presenting)
	March 27	Debate Presentations (2-3 groups)	<ul style="list-style-type: none"> Group Assignment Due (if presenting)
Week 13	April 1	Debate Presentations (1 group) Course Wrap up and Review	<ul style="list-style-type: none"> Group Assignment Due (if presenting)
	April 3	No class – Good Friday	
Week 14	April 8	Final Assignments Due	<ul style="list-style-type: none"> Assignment: Peer/Self Evaluations & Reflection due SLEQ forms due

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 Mi'kmaq and Indigenous Relations (including the Elders in Residence program, Land Acknowledgements, Understanding Our Roots, and much more) can be found at: <https://www.dal.ca/about/mission-vision-values/mikmaq-indigenous-relations.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/mission-vision-values/global-relations.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/campus_life/ssc.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: <https://www.dal.ca/about/mission-vision-values/equity-diversity-inclusion-and-accessibility/about-office-equity-inclusion.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/content/dam/www/about/leadership-and-governance/governing-bodies/code-student-conduct.pdf>

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/ouroriginal-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.¹¹

Student Resources and Support

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

http://www.dal.ca/academics/important_dates.html

Classroom Recording Protocol:

https://www.dal.ca/dept/university_secretariat/policies/academic/classroom-recording-protocol.html

Dalhousie Grading Practices Policies:

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

Grade Appeal Process: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

Sexualized Violence Policy: https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html

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

Learning and Support Resources

General Academic Support – Advising (Halifax): https://www.dal.ca/campus_life/academic-support/advising.html

General Academic Support – Advising (Truro): <https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising.html>

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

On Track (helps you transition into university, and supports you through your first year at Dalhousie and beyond): https://www.dal.ca/campus_life/academic-support/On-track.html

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

Indigenous Connection: <https://www.dal.ca/about-dal/indigenous-connection.html>

Elders-in-Residence (The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit the office in the Indigenous Student Centre or contact the program at elders@dal.ca or 902-494-6803:

<https://cdn.dal.ca/content/dam/dalhousie/pdf/academics/UG/indigenous-studies/Elder-Protocol-July2018.pdf>

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

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

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

LGBTQ2SIA+ Collaborative: <https://www.dal.ca/dept/vpei/edia/education/community-specific-spaces/LGBTQ2SIA-collaborative.html>

Dalhousie Libraries: <http://libraries.dal.ca/>

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

Dalhousie Student Advocacy Services: <https://www.dsu.ca/dsas?rq=student%20advocacy>

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

Human Rights and Equity Services: <https://www.dal.ca/dept/hres.html>

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

Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Faculty of Science Advising Support: <https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html>

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

Safety

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.htm>