Welcome to ENVS 1100

Foundations of Environmental Science: Ecosphere, Resources, and Sustainability

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.

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

ENVS 1100 Teaching Team

Dr. Sue Gass | Pronouns: she/her| Email: sue.gass@dal.ca – Lecture Coordinator

Dr. Caroline Franklin | Pronouns: she/her | Email: caroline.franklin@dal.ca – Tutorial Coordinator

We are looking forward to this course immensely. We will explore a range of topics that will help you develop a better understanding of Earth systems and how humans are interacting and affecting these systems. Our ENVS 1100 teaching team will guide you through the content with lectures and tutorials. You will encounter a multi-faceted approach to teaching in this course. We will do our best to introduce a range of learning techniques in the lectures and tutorials in hopes of engaging every one of you with the course material.

We have three teaching assistants joining this course. Each TA is responsible for leading two weekly tutorials. Take a minute to introduce yourself to your TA at your first tutorial session.

Teaching Assistant	Email
Arden Goodfellow	ardengoodfellow@dal.ca
Elliott Ankersen	e.ankersen@dal.ca
Sarah Macdonald	sarah.macdonaldd@dal.ca

Student Support Office Hours

Fridays 11-12:30 pm LSC B3082

Office hours are Fridays from 11-12:30 pm. All office hours are held in Dr. Sue Gass' office LSC Biology Wing room 3082. If you are not able to make those times, you can email Dr. Gass to set up a meeting at another time. This time is an opportunity for you to introduce yourselves, a chance to ask clarifying questions about content, or explore what you want to do after you graduate. If a few students come together, we can also work through practice questions. These times are set aside for this purpose so please do not hesitate to take advantage and come by.

Course Description

The environment is a dynamic web of interactions between all components of the lithosphere, the hydrosphere, the biosphere, and the atmosphere. Humans are one component of the biosphere, and we are unique in that we have the capacity to make individual and community decisions that can have a tremendous impact on many other components of the environment. How can we predict the effects of our actions? How can we mitigate our impacts? We must understand the components of the environment and the interactions between them to answer these questions. Foundations of Environmental Science introduces students to environmental science, explores Earth systems, the environmental problems and the ethics that impinge on our individual and community decisions about the environment. Specifically, the course will cover the how scientists conduct scientific investigations, information literacy, environmental ecology, human population growth, biogeochemical cycles, forests and forest management, conservation biology, agriculture and the environment, and ocean and freshwater systems.

There are no pre-requisites for this course.

Learning objectives

We will work on developing critical thinking and problem-solving skills by working through case studies, discussing videos, and exploring the topics introduced in the textbook.

What is Environmental Science and why is it important?

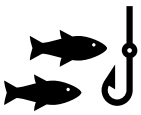
- Define Environmental Science
- Describe different ways to investigate environmental issues
- Identify logical fallacies while working through an environmental problem
- Identify and breakdown wicked problems
- Describe critical thinking and how it can counter logical fallacies used in arguments

How do ecosystems function, and what are the principles of ecology?

- Explain the principles of community and population ecology,
- Describe energy flow through ecosystems and nutrient cycles.
- Describe Earth's biomes
- Describe coral reef ecosystems

Why is biodiversity important, and how can we conserve it?

- Describe why biodiversity is important to Earth's functioning and the factors that contribute to its loss.
- Explore strategies for biodiversity conservation and ecosystem restoration.
- Describe the principles of the theory of evolution by natural selection.
- Compare and contrast the time frames between the theory of evolution by natural selection and the current rate of the loss of global biodiversity.



How do human activities impact the environment?

- Discuss the concept of the Anthropocene and its implications for the environment.
- Describe the causes and consequences of ocean acidification
- Explain the development of modern agriculture, identify the resulting environmental problems,
- Describe key issues around freshwater resources and pollution

How can we manage natural resources sustainable? Can we feed the world's growing population sustainably?

- Evaluate sustainable practices for managing natural resources, including water, soil, forests, and fisheries.
- Identify examples of adaptive management and the precautionary principle
- Describe the principles of sustainable agriculture
- Discuss challenges associated with sustainable fisheries management and aquaculture

Course delivery

This course will be held in person. Lectures slides will be provided before each lecture.

Lectures: Wednesdays and Fridays 1:05-2:25 pm – LSC Common Area Room 242

Tutorials: Each student has signed up for a weekly 110 min tutorial which will run 10 times throughout the term. See the course schedule for details.

Course Materials - Required

S. Karr et al. 2021 Environmental Science for a Changing World. Digital Update Edition + Achieve

You can purchase this book either at the bookstore in loose leaf format or as an e-book with Achieve. All new loose-leaf copies purchased at the bookstore come with access to the e-book as well.

We will also be using Poll Everywhere in class. This is a free software for students. Please feel free to download this software on your mobile device before coming to class for ease of use during our first day of class. There are no grades associated with the use of Poll Everywhere.

Online Learning Platform

Brightspace – On-line Integrated Learning Platform

All course materials can be found on our Brightspace. The course syllabus, lecture slides, announcements, assignments, quizzes, readings, access to the textbook, and other pertinent information are accessible through our course Brightspace site. You should be checking this site regularly.

Technology support

Direct links to Dalhousie Information Technology Services support, and Macmillan textbook support are listed on Brightspace under the **Technical Support** module.

Course Assessment

Overview

Assessment	Date	% of final grade
Reading quizzes Best 12 out of 16	See class schedule	5%
Tutorial Assignments Best 6 of 7	See class schedule	25%
Species at Risk presentation	See class schedule	5%
Mid-term Exam	October 31st in class	25%
Final Exam cumulative	Exam period	40%
Total		100%

Assignments

There are 7 tutorial assignments which will be completed during tutorial sessions. You must attend your tutorial to be eligible to submit an assignment. We will drop the lowest score from your 7 assignments Each assignment is worth 4.2%. Tutorial assignments are due before the start of the next scheduled tutorial the following week. Please see the schedule for more details.

The final assignment is the Species at Risk presentation. This will take place during the final tutorial session and is worth 5% of your final grade.

Reading quizzes

There will be 16 quizzes based on the textbook readings spread throughout the term. The idea is that you are quizzed on the reading for the designated lecture before attending that lecture. Each quiz will be available on Brightspace on the days leading up to the designated lecture. Each quiz will close at midnight the day **before** the designated lecture day. Each quiz will consist of 5 multiple-choice questions based on the assigned reading for that day. You will have 15 minutes to complete the quiz once you start. The 5% for your final grade will come from the average of your 12 highest scores from the 16 quizzes. This means you have four freebies that will not count towards your final grade. Quizzes are noted in the class schedule as Q1-Q16. Remember you must complete the quiz before midnight the day **before** the designated lecture. There are no make-up quizzes.

Mid-term Exam

There will be one mid-term exams on **October 31st during class time** worth 25% of your grade. It will cover the course material from Week 1 – Week 6 inclusive.

Final Exam

There will be a final exam held during the final exam period (**Dec. 11-21st**)**.** The exam dates will be announced by the Registrar's Office in early October. The exam will consist of questions based on material from the **whole term** and is worth 40% of your grade. You will have a total of **2 hours** to complete the exam.

Policy on late assignments, extensions, and make-up tests

Late tutorial assignments

Students are asked to take responsibility for their own tutorial assignment deadlines and should **not** seek doctor's notes for missed assignments. Students who require an extension on their tutorial assignments due to illness should contact the Tutorial Coordinator **by email prior to an assignment deadline and submit a completed Student Declaration of Absence (SDA)** via the Assignment link on Brightspace. Only **TWO** separate Student Declaration of Absence forms may be submitted per term for this course. If the SDA has been submitted, the student will have three extra days to complete the assignment. Assignments submitted late without prior notification **and** the submission of an SDA, or without an approved extension will receive a deduction of 10% per day (including weekends) until a maximum of seven days, after which a grade of zero will be assigned.

Missed tutorials

You must attend your registered tutorial to be eligible to submit an assignment for that tutorial. If you are going to miss a tutorial, please email the Tutorial Coordinator (Caroline.Franklin@dal.ca) and submit an SDA on Brightspace prior to the start of your tutorial. If you fail to do so, you will not be eligible for a make-up assignment.

Missed quizzes

SDAs cannot be used for Brightspace quizzes. Your final grade will come from the best 12 out of 16 quiz scores.

Exams

If you are ill for the mid-term exam, you should contact the instructor by email and submit an SDA form before the start of the midterm. A make-up midterm exam will be scheduled seven days following the originally scheduled exam.

Note that, except for documented sudden unforeseen circumstances, no make-up exam or rewrite will be offered for the final exam. It is your responsibility to write the exam when it is scheduled. Students who miss the final exam due to unforeseen circumstances must inform the instructor prior to the start of the exam and will be offered a make-up exam at a later date. The Student Declaration of Absence form does not apply to final exams.

Course Policies related to Academic Integrity

Students will often be asked to work together during the tutorial sessions, but unless specifically stated in the assignment instructions, the final work that is submitted must be completed individually.

You will find that your tutorial assignments will be based on work that YOU have completed during the tutorial sessions and answers to the questions may vary for every student depending on the outcome of their tutorial exercise. You will find that the use of AI generative tools will not be helpful to these assignments because of the individual and specific nature of each assignment. You should note that the material generated by these AI programs may be inaccurate, incomplete, or otherwise problematic. Further, you should be aware that use may also stifle your own independent thinking and creativity.

You may not submit any work generated by an AI program as your own. You may use AI-driven tools to assist your learning, but you may not use them to produce work to be submitted for evaluations. Due to the nature of this course, it would be impracticable and more difficult to assess students properly if AI tools were allowed. In this course, using AI-driven tools when producing submitted work constitutes an academic offence.

Any plagiarism or other form of cheating will be dealt with severely under relevant Dalhousie University policies.

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)		

ENVS 1100
Syllabus Part B
University Policies and Statements

Recognition of Mi'kmaq Territory

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

Internationalization

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

Academic Integrity

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

Accessibility

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

Conduct in the Classroom – Culture of Respect

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

Diversity and Inclusion – Culture of Respect

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

Student Code of Conduct

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

Fair Dealing Policy

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

Originality Checking Software

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