



## Welcome to ENVS 1100

Foundations of Environmental Science: Ecosphere, Resources, and Sustainability

Fall 2024

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, present, and future. 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](mailto:sue.gass@dal.ca) – Course Coordinator

Dr. Caroline Franklin | Pronouns: she/her | Email: [caroline.franklin@dal.ca](mailto: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 everyone with the course material.

We have three teaching assistants joining this course. Take a minute to introduce yourself to your TA at your first tutorial session.

Teaching Assistants:	Email	Tutorials
Hannah Freeman	<a href="mailto:hannahfreeman@dal.ca">hannahfreeman@dal.ca</a>	Wednesday at 9:35, 11:35 & Friday at 14:35
Madeline Healey	<a href="mailto:mhealey@dal.ca">mhealey@dal.ca</a>	Tuesday at 14:35 & Thursday at 14:35
Sarah Macdonald	<a href="mailto:sr873573@dal.ca">sr873573@dal.ca</a>	Tuesday at 11:35 & Thursday at 11:35

## Student Support Hours



Tuesdays 1:30-2:15 pm, and Thursdays 1:30-2:15 pm. All office hours will be held in the Tutorial classroom LSC Biology 2030. You can email Dr. Gass to set up a meeting at another time or if you'd prefer to meet in her office. These times are an opportunity for you to introduce yourselves and ask clarifying questions about content. 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



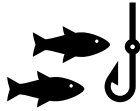
### **How do ecosystems function, and what are the principles of ecology?**

- 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:** Tuesdays and Thursdays 8:35-9:55 am – DUNN 117

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

### **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, out-of-text readings, access to the textbook, and other pertinent information are accessible through our course Brightspace site.

### **Course Materials - Required**

S. Karr et al. 2021 Environmental Science for a Changing World with Achieve

You can purchase this book either at the bookstore in hard copy or as an e-book via our Brightspace page. All new hard copies purchased at the bookstore come with access to the e-book as well. The

textbook comes with an online platform called Achieve which provides you with access to the e-book and online practice questions to help you study for the quizzes and exams.

This course is participating in Dalhousie University's Inclusive Access Initiative, which means that you will be able to access the textbook directly inside of Brightspace. All you need to do is simply click on any course material link. You can access your course material for free any time before the add-drop deadline. If you have any questions, please feel free to reach out to [support@willolabs.com](mailto:support@willolabs.com).

### **Device with Internet access and in class response system**

We will be using the app **Top Hat** (<https://tophat.com>) for in-class quizzes and class participation marks. You will submit answers to in-class questions using either an Apple or Android smartphone, tablet or computer web browser (Google Chrome or Firefox), or through text message (if enabled). For instructions on how to purchase (\$22) and download the Top Hat app, please refer to the "TopHat" module found in our Brightspace course space.

You will be asked to access the Internet on a personal computer during tutorials. If you do not have a device (laptop computer/tablet and cell phone) that can access Wi-Fi, please contact the tutorial coordinator. You are not expected to purchase any electronic devices for the course.

### **Technology support**

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

### **Course Assessments**

#### **Overview**

Assessment	Date	% of final grade
TopHat class quizzes and participation	Every lecture	5%
Tutorial Assignments Best 6 of 7	See class schedule	20%
Species at Risk presentation	Week 13	5%
Mid-term Exam 1	October 3 <sup>rd</sup> in class	10%
Mid-term Exam 2	October 31 <sup>st</sup> in class	20%
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 3.33%. Tutorial assignments are due before the start of the next scheduled tutorial the following week. Please see the schedule for more details.

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

### **TopHat quizzes and participation**

There will be approximately 5 opportunities per lecture to participate during our lectures using TopHat. Two to three questions will be quiz style questions based on the previous lecture and two to three questions will be graded for participation only (i.e. you don't need to get the correct answer to earn points). A quiz question is worth 1 pt and a participation question is worth 0.5 points. These points will add up over the term to 110 points and will be worth 5% of your final grade. This 5% is set up to encourage you to attend class regularly and start building good study habits by reviewing lecture material and textbook readings after each lecture. There are no opportunities to make-up missed lectures.

### **Mid-term Exam**

There will be two mid-term exams. The first will be held on **October 3<sup>rd</sup>** and is worth 10% of your final grade. It will cover material covered from Lectures 1-9 inclusive. The second will be on **October 31<sup>st</sup>** and is worth 20% of your final grade. The second midterm will cover material from Lecture 11-16 inclusive. These midterms will be held **in class during our regular lecture times**.

### **Final Exam**

There will be a final exam held during the final exam period (**Dec. 8-19<sup>th</sup>**). 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 **3 hours** to complete the exam.

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

#### **Late assignments**

Dalhousie students are asked to take responsibility for their own missed assignment deadlines (3 days or less) and should **not** seek doctor's notes for missed assignments. Students in ENVS 1100 who require an extension due to illness should contact the tutorial instructor **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. Once 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 the assignment is late.

#### **Missed tutorials**

You must attend each tutorial to be eligible to submit an assignment for that tutorial. If you are going to miss a tutorial due to illness, please contact your TA and Tutorial Coordinator prior to the start of your tutorial session.

#### **Exams**

If you are ill for one of the mid-terms, you should contact the Course Coordinator by email and submit an SDA form. A make-up midterm exam will be scheduled on the week 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 deter from learning if AI tools are used. For this reason, and even if these tools will be valuable tools in your career, their use is restricted. 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**

<b>A+</b> (90-100)	<b>B+</b> (77-79)	<b>C+</b> (65-69)	<b>D</b>	(50-54)
<b>A</b> (85-89)	<b>B</b> (73-76)	<b>C</b> (60-64)	<b>F</b>	(<50)
<b>A-</b> (80-84)	<b>B-</b> (70-72)	<b>C-</b> (55-59)		

**ENVS 1100 – Fall 2024**  
**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](mailto:elders@dal.ca). Additional information regarding the Indigenous Student Centre can be found at: [https://www.dal.ca/campus\\_life/communities/indigenous.html](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](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](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](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](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](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.