

Faculty of Science Course Syllabus
Department of Earth and Environmental Sciences
ENVS 1200
Current Environmental Challenges: Analysis and Solutions
Winter 2022

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

Instructor: Dr. Caroline Franklin | Email: Caroline.Franklin@dal.ca | Pronouns: she/her

Student hours: Please email instructor to schedule an appointment

Lectures: Tuesday and Thursday 8:35 am – 9:55 am AT

| | | | |
|-------------------|---|---------|---------------|
| Tutorials: | 1 | Monday | 14:35 – 15:55 |
| | 2 | Monday | 13:05 – 14:25 |
| | 3 | Tuesday | 16:05 – 17:25 |
| | 4 | Tuesday | 14:35 – 15:55 |
| | 5 | Monday | 10:05 – 11:25 |
| | 6 | Monday | 10:05 – 11:25 |

Course delivery: Online or in-person depending on university guidelines

All students are required to comply with health and safety requirements and should be considerate of others' health concerns. Non-compliance may be reported under the Code of Student Conduct. Information on the COVID-19 pandemic is posted online:

Provincial government website: <https://novascotia.ca/coronavirus/working-during-covid-19/>

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

Course Description

This course introduces current issues and challenges in Environmental Science including air pollution and climate change, non-renewable and renewable energy, waste, urbanization, environmental law, and sustainability and education. Tutorials reinforce and supplement lectures and allow for small group discussion and debate.

Course Exclusion

ENVI 1100.06, ENVS 1000.06, MGMT 1702.03

Learning Objectives

- Illustrate Earth's energy balance
- Describe the greenhouse effect
- Explain the consequences of global climate change and the causes of ozone depletion
- Describe the limitations of mainstream economics
- Explain life cycle assessment as a tool to assess environmental impacts
- Describe the use of fossil fuels as a source of energy and their environmental impacts
- Contrast benefits and challenges of nuclear energy and renewable energy options

- Describe the global pattern of urbanization and related environmental effects
- Compare methods of solid waste management
- Develop awareness of the environment and your impact on the environment
- Create an infographic to communicate information
- Enhance communication, writing, and critical thinking skills

Course Materials

Textbook and Achieve

Karr, S. 2021. Environmental Science for a Changing World. Fourth Edition **with Achieve**. Macmillan Learning. New York, NY, USA. Achieve is an online learning platform that complements the textbook and is required for homework sets. If students do not already have the textbook and Achieve access from ENVS 1100 in Fall 2021, they should choose one of the following options to purchase from Brightspace or the Dalhousie Bookstore:

1. Electronic Textbook Access and Achieve Access (One Term)
2. Electronic Textbook Access, Achieve Access (One Term), and Loose-Leaf Version of Textbook

Brightspace – Online Learning Management System

Students are expected to check Brightspace regularly for announcements, materials, and grades.

Device with Internet access

Students will require access to the Internet for lectures and tutorials.

Course Format

When the university requests online learning, virtual lectures and tutorials will occur synchronously at the designated times via MS Teams. The live tutorial sessions will not be recorded. Please refer to Brightspace for additional information. When in-person learning is permitted, lectures and tutorials will occur as scheduled in designated rooms on campus.

Course Assessment

| Assessment | Weight (% of final grade) | Due Date |
|---|---------------------------|---|
| Homework (best 12 of 13) | 12% (1% each) | Please see class schedule |
| Tutorial assignments *Specific date is registered tutorial date for individual student | | |
| 1 | 5% | March 28 or 29 and April 4 or 5* |
| 2 | 3% | January 24 or 25 (before tutorial)* |
| 3 | 3% | January 31 or February 1 (before tutorial)* |
| 4 | 3% | February 7 or 8 (before tutorial)* |
| 5 | 3% | February 14 or 15 (before tutorial)* |
| 6 | 3% | February 28 or March 1 (before tutorial)* |
| 7 | 3% | March 7 or 8 (before tutorial)* |
| 8 | 5% | March 14 or 15 (before tutorial)* |
| 9 | 5% | March 21 or 22 (during tutorial)* |
| 10 | 5% | April 4 or 5 (before tutorial)* |
| Midterm exam | 15% | February 15 (in class) |
| Final exam | 35% | To be announced (scheduled exam period) |

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 on Missed or Late Academic Requirements

Homework

- Late or missed homework submissions will receive a grade of zero; however, only the 12 of 13 homework submissions with the highest grades will be counted towards the final grade

Tutorials

- Students must attend the tutorial section for which they are registered
- Students must attend the tutorial to submit the assignment associated with the tutorial
- If a student is unable to attend a tutorial, they must submit a Student Declaration of Absence Form to the instructor by email at least one week prior to the scheduled tutorial time and alternate arrangements will be at the discretion of the instructor
- Late assignments will be deducted 10%/day up to a maximum of five days after the deadline, after which a grade of zero will be assigned, unless a Student Declaration of Absence Form was submitted to the instructor by email at least one week prior to the assignment deadline, in which case alternate arrangements will be at the discretion of the instructor
- The Student Declaration of Absence Form may not be submitted more than twice during the term
- Information and Form: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/academic-policies/student-absence.html

Midterm exam

- Students who miss the midterm will automatically have the 15% of the grade represented by the midterm applied to the final exam, which will then be worth 50%

Final exam

The final exam will be based on material from the entire term and will occur during the final exam period (April 8 – 26)

- Students will have three hours to complete the exam
- Until the exam date is officially scheduled by the Registrar's Office, students should NOT plan to leave Halifax before the end of the final exam period
- There will be no make-up exam so students must write the exam at the scheduled time

Course Policies related to Academic Integrity

Homework sets and assignments submitted by individual students must be completed independently. Students are expected to collaborate on group assignments and contribute to team success for tutorials.

Course Content

Lecture Schedule

| Lecture | Date | Topic | Readings ¹ | Homework ² |
|------------|-------------|--|-----------------------|-----------------------|
| 1 | January 6 | Introduction | Syllabus | - |
| 2 | January 11 | Water Pollution | Module 6.2 | Due January 13 |
| 3 | January 13 | Land Pollution | - | - |
| 4 | January 18 | Plastic Pollution | - | - |
| 5 | January 20 | Air Pollution | Module 10.1 | Due January 22 |
| 6 | January 25 | Climate Change Part 1 | Module 10.2 | Due January 29 |
| 7 | January 27 | Climate Change Part 2 | | |
| 8 | February 1 | Environmental Policy | Module 5.2 | Due February 3 |
| 9 | February 3 | Environmental Economics and Consumption | Module 5.1 | Due February 5 |
| 10 | February 8 | Life Cycle Assessment | Online Reading | - |
| 11 | February 10 | Review | - | - |
| 12 | February 15 | Midterm | - | - |
| 13 | February 17 | Energy Consumption | - | - |
| No Lecture | February 22 | Winter Study Break | - | - |
| No Lecture | February 24 | Winter Study Break | - | - |
| 14 | March 1 | Coal | Module 9.1 | Due March 3 |
| 15 | March 3 | Oil and Natural Gas | Module 9.2 | Due March 5 |
| 16 | March 8 | Nuclear Power | Module 11.1 | Due March 10 |
| 17 | March 10 | Renewable Energy Part 1 | Module 11.2 | Due March 17 |
| 18 | March 15 | Renewable Energy Part 2 | | |
| 19 | March 17 | Renewable Energy Part 3 | Module 11.3 | Due March 19 |
| 20 | March 22 | Urbanization and Sustainable Communities | Module 4.2 | Due March 24 |
| 21 | March 24 | Solid Waste Management | Module 5.3 | Due March 26 |
| 22 | March 29 | Environmental Health and Toxicology | Module 4.3 | Due March 31 |
| 23 | March 31 | Environmental Education | Online Reading | - |
| 24 | April 5 | Review | - | - |

¹Module numbers correspond to textbook (Karr, S. 2021. Environmental Science for a Changing World 4th Edition)

²Refers to online Achieve Homework, which **must be submitted electronically by 11:59 pm AT on the due date**

Tutorial Schedule

| Tutorial Dates* | Tutorial | Topic | Corresponding Assignment |
|--------------------------|--------------|---------------------------------------|--------------------------|
| January 10 or 11 | 1 | Visualizing the Environment Part 1 | 1 |
| January 17 or 18 | 2 | Environmental Heroes | 2 |
| January 24 or 25 | 3 | Sustainable Businesses | 3 |
| January 31 or February 1 | 4 | The Greenhouse Effect | 4 |
| February 7 or 8 | 5 | Ecological Footprint | 5 |
| February 14 or 15 | 6 | Life Cycle Assessment | 6 |
| February 21 or 22 | No Tutorials | - | - |
| February 28 or March 1 | 7 | Energy Efficiency | 7 |
| March 7 or 8 | 8 | Sustainable Buildings | 8 |
| March 14 or 15 | 9 | Debate Preparation | 9 |
| March 21 or 22 | 10 | Debates | 9 |
| March 28 or 29 | 11 | Environmental Challenge Investigation | 10 |
| April 4 or 5 | 12 | Visualizing the Environment Part 2 | 1 |

*Specific date is registered tutorial date for individual student

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

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 Students 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

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>