ENVS2100 | Fall 2020 | Virtual Offering

Environmental Informatics

Instructor: Dr. Amy Mui (amy.mui@dal.ca)

Office Hours: Whenever you need me! Send me a message to set-up an MS Teams appointment. Video optional, pyjamas are acceptable.

Teaching Assistants : Mike Bawden (mike.bawden@dal.ca)
Thomas Baker (thomasbaker@dal.ca)

	DAY	TIME	LOCATION
Lectures:	Asynchronous	n/a	N/a – all materials available on BrightSpace
Labs:	Synchronous* Thursdays	10:00 - 11:30am Atlantic Standard Time (AST, UTC -3)	Collaborate Ultra or MS Teams

*Attendance at synchronous lab meetups are strongly encouraged but not mandatory. The purpose of meetups is to provide lab support and to give you a chance to get to know me, your TA's, and the rest of the class. Participation will be assessed based on attendance but also via other means such as posted participation activities throughout the term. If you do not attend the meetups, then you should complete the alternate activities.

Synchronous lab meetups will utilize the Collaborate Ultra platform accessed via BrightSpace, or MS Teams if we have technical difficulties. You will need a computer with video and audio capabilities. Detailed instructions on access will be posted on Brightspace.

A class poll was sent out before the start of term to determine everyone's location. Those who are unable to attend due to restrictions such as time zone or hardware requirements should have spoken to me before the start of term. If you have not, please do so as soon as possible.

Course Description

Environmental Informatics is the knowledge, skills and tools which enable information to be collected, managed and disseminated to support research in environmental science. Students develop analytical skills using a variety of software including an introduction to spatial querying in GIS. Identification of fallacies in the media and principles of effective science communication are introduced and applied to current environmental issues and challenges.

Course Prerequisites: ENVS 1100.03 or ENVS 1200.03 and STAT 1060.03

Course Objectives/Learning Outcomes

After successfully completing this course, students will be able to;

- Understand sources of information required for addressing environmental challenges
- Identify a suite of contemporary tools and techniques in environmental informatics
- Apply literacy, numeracy, and critical thinking skills to environmental problem-solving
- Utilize geographic information systems (GIS) at an introductory level
- Apply basic R coding language to view, query, and visualize environmental data

Course Materials

Textbook. There is no textbook for this course. Reading materials will be posted on Brightspace.

Student Response Systems. Throughout the term we may use a series of online student response systems for polling the class. Examples include Socrative (www.socrative.com), Poll Everywhere (www.pollev.com) and functions built into Collaborate Ultra and BrightSpace and/or MS Teams. All platforms are free and no additional fees are required.

Course Assessment

Component	Weight	Date	Length/Time
Quizzes			
Quiz 1	15%	Th Oct 22	Open for 12 hours
Quiz 2	15%	Final Exam Period	Open for 12 hours
Assignments			
1. Data Management in Excel	15%	Tues Sept 29	Noon (12pm, AST)
2. Mapping Census Data with ArcGIS Pro	15%	Mon Oct 19	Noon (12pm, AST)
3. Intro to Remote Sensing and Coding in R	15%	Thurs Nov 12	Noon (12pm, AST)
4. Environmental Communication	15%	Fri Dec 4	Noon (12pm, AST)
Participation	10%	Ongoing	

Quizzes: There are **two quizzes** based on all course materials that cover the first and second halves of the term. Quizzes are not cumulative and will take place online within a 12-hour window. The second quiz will take place during the final exam period to give you more time to prepare. Note, the value for both quizzes is 15% each.

Assignments: There are **four assignments** that build on class topics and are based on work completed in the computer lab. Assignments will often need to be completed outside of class time depending on how quickly you work. Please reach out if you need additional assistance beyond what is provided in class. Assignments are submitted electronically through the Brightspace on the due date. All assignments must include your name and banner number as well as the assignment number, term, and year. See 'Important Notes' section for policy on late assignments.

Participation: This is determined through your engagement in class meetups (via MS Teams or Collaborate Ultra), discussion boards, and participation activities.

Course Schedule

Week	Date			Class Activity	Quizzes & Due Dates
1	Sept	10	LEC	Course Intro	
			LAB		
2		17	LEC	Finding and Managing Environmental Data (VLOOKUP Demo)	
			LAB	LAB 1 Demo (Excel)	
3		24	LEC	Graphing & Data Visualization	
			LAB	LAB 1 Demo (Excel)	LAB 1 DUE: Tues Sept 29 @12pm AST
4	Oct	1	LEC	Intro to Geographic Information Systems	
			LAB	LAB 2 Demo (Excel)	
5		8	LEC	The Canadian Census and Its Relevance, Guest Louise Gillis	
			LAB	LAB 2 Demo (ArcPro)	
6		15	LEC	Lying with Maps and	
			LAB	LAB 2 Demo (ArcPro)	LAB 2 DUE: Mon Oct 19 @ 12pm AST
7		22	LEC	**QUIZ 1 ONLINE**	**Open for 12 hours**
			LAB	No videos today	
8		29	LEC	Introduction to Remote Sensing	
			LAB	LAB 3 Demo (ArcPro)	
9	Nov	5	LEC	Introduction to Coding in R	
			LAB	LAB 3 Demo (R program)	
10	Nov	12	LEC	Fall Study Break, No Class	LAB 3 DUE: Thurs Nov 12 @ 12pm AST
			LAB	Fall Study Break….Remember to study!	
11		19	LEC	Logical Fallacies in the Media	
			LAB	Lab 4 Demo (Inforgraphics in PPT)	
12		26	LEC	Science Communication in the MEdia	
			LAB	Lab 4 Demo	
13	Dec	3	LEC	LAST CLASS	
			LAB		LAB 4 DUE: Fri Dec 4 @ 12pm AST
14	Dec	10-20		**Exam Period (QUIZ 2)**	**Open for 12 hours**

IMPORTANT NOTES:

- This schedule is tentative and may change slightly depending on class interests and time available. The syllabus will be updated accordingly and posted on Brightspace.

- All course materials will be posted on Brightspace - please login to the site regularly. In order to receive timely notifications, please **sign-up to receive immediate text or email notifications** when new course announcements appear. You can do so by clicking on your name in the top right corner of Brightspace > select *Notifications* > under *Instant Notifications* check "Announcements – new announcement available".

- The last day to drop fall session courses without a 'W' (for withdrawn) is October 2. View this and other important dates here: https://www.dal.ca/academics/important_dates.html

- 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

*Class culture***:** We aim to cultivate a culture of mutual respect, inclusiveness, and collective curiosity. Be courteous of your neighbours, engage in discussion, and speak up if you are struggling (if you're having a great time, speak up as well! ;)

Late penalties: Assignments handed in on the due date will be evaluated at 100% of their potential score. Late assignments will be subject to a late penalty of 15% per day (including weekends). Assignments submitted 7 calendar days past the due date will be assigned a zero. Assignments handed in AFTER the work has been returned to the class cannot be marked for credit.

Missed Exam:

Student Declaration of Absence: The new Student Declaration of Absence (SDA) Form will be used in this course and will replace sick notes for absences of three days or fewer that result in missed or late academic requirements. The form can be accessed through Brightspace or submitted to me via email. **Submission does not provide automatic exemption from any academic requirements that were missed or late during an absence**. Any alternate coursework arrangements for missed or late academic requirements are at the discretion of the course instructor. **Students must also email the instructor prior to the due date if a deadline is going to be missed.**

Plagiarism: Plagiarism and cheating is a serious academic offense and includes the submission or presentation of the work of another as if it were one's own. Failure to acknowledge someone else's words, phrases, ideas, recording, images, code, results, lecture content, term paper, or assignment responses may result in a failing grade or, if very serious, suspension or expulsion from the university. Please visit https://www.dal.ca/dept/university_secretariat/academic-integrity/plagiarism-cheating.html for more information.

Student Collaboration: Given the move to virtual teaching this term, it is encouraged that students work together to provide support, collaboration, and to build lasting friendships. Discussing course content and sharing results is appropriate but providing answers to an individual that has not conducted the work themselves is not. Each student must submit their own work. Copying from another, even small passages of text is strictly discouraged and would fall under the umbrella of plagiarism.

University Policies and Statements

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

Missed or Late Academic Requirements due to Student Absence
As per Senate decision instructors may not require medical notes of students who must miss an academic requirement**, including the final exam**, for courses offered during fall or winter 2020-21 (until April 30, 2021). Information on regular policy, including the use of the Student Declaration of Absence can be found here: **https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html.**

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