

Course Outline

Topics in International Development

Economics of Environment and Climate Change

McGill University

General Information

Course #	INTD 397
Section	3
Term	Winter
Year	2021
Course pre-requisite	ECON 313
Course schedule (day and time of class)	Monday, 11:35 – 2:25
Number of credits	3

Instructor Information

Name and Title:	Fabien Forge, PhD (he/him)
Email:	fabien.forge@mcgill.ca
Virtual office hours:	Mondays, 2:45 – 4:45pm
Communication plan:	Online using Zoom during office hours or by appointment

TA Information

TBD

Course Overview

This course is designed to introduce students to the issues and practice of environmental economics. The focus will be on the current empirical research interested in the environmental issues of developing economies. Examples of topics include the impact of climate change and pollution on health outcomes, conflict and agriculture as well as adaptation and deforestation.

Instructor Message Regarding Remote Delivery

You will find in myCourses [Student-specific Guidelines for Remote Teaching and Learning](#) and [Remote Learning Resources](#). Students should feel free to contact me with any issues regarding remote delivery.

Learning Outcomes

The main aims of the course are to introduce students to the current academic literature in environment and development economics, and to help students to better understand and assess work in applied microeconomics, especially as it pertains to environmental issues. By the end of the semester, students will know about the main impacts of climate change and pollution in developing countries. They will also learn about the ability of individuals and governments to adapt to these issues. Finally, they will be able to understand the methods used and results from this literature.

Instructional Method

There is no textbook for this course. The course will mainly be based on a set of academic papers, but students will not be required to read these papers. Instead, the material for each topic will be introduced and discussed in class. This includes the econometric tools used in these papers which will be approached from an intuitive standpoint, not mathematically. Each class, we be split into two sessions of 1 hour 20 min with a 10-15 min break in-between. Each session will include 1 hour of content teaching and interaction and 20 min for Q&As.

Expectations for Student Participation

Each class will be highly interactive, and students will be expected to participate in class discussions by making comments or asking questions. You do not have to wait for the end of session Q&A to ask question. You can either use the *raise your hand* command in Zoom or directly jump in. Students can also use the online tools available in myCourses.

Course Content

Class	Date	Description	Bibliography
1	4 Jan	Introduction – environment and development What are the characteristics of climate change and pollution emissions? How do they interact with economic development?	Dell et al. (2012)
2	11 Jan	Understanding applied research, part 1 Introduction to the concept of causal inference. Randomized control trials and the concept of counterfactual.	
3	18 Jan	Heat and behavior – Lab experiment Are humans changing behavior in response to an increase in temperature? Is the answer changing depending on where you leave? An RCT approach.	Almås et al. (2019)
4	25 Jan	Understanding applied research, part 2 Introduction to panel data analysis, the preferred tool in empirical environmental studies.	
5	1 Feb	Heat and behavior – Quasi-natural experiment Are humans becoming more aggressive when times are bad? A panel data approach.	Miguel (2005), Burke et al. (2015)
6	8 Feb	1 st Midterm: classes 1–5	
7	15 Feb	Climate change, health and adaptation What is the effect of temperatures on health? Is it possible to adapt?	Burgess et al. (2017), Deschênes and Greenstone (2011)
8	22 Feb	Pollution and health How does pollution affect people’s health? An instrumental variable approach.	Heyes and Zhu (2019)
Study Break	1 Mar		
9	8 Mar	Pollution, firms and regulation Is it possible to decrease pollution emitted by firms when corruption is widespread?	Duflo et al. (2013)
10	15 Mar	Poverty and deforestation Is poverty making deforestation more likely? Is there anything governments can do?	Burgess et al. (2019)
11	22 Mar	2 nd Midterm: classes 7–10	
12	29 Mar	Climate change and agriculture What is the relationship between climate change and agriculture?	Schlenker and Roberts (2009)
Easter Monday	5 Apr		
13	12 Apr	Predicting future impacts Can we predict what the future impact of climate change will be?	Auffhammer et al. (2013)

Recordings of sessions

Courses will be taught online using [Zoom](#) during class hours (Mondays 11:35–2:25pm). Lectures will also be recorded and posted on myCourses. Students should make an effort to attend each online class, though accommodations will be made for students who face difficulties in doing so.

Please read the [Guidelines on Remote Teaching and Learning](#) and the course outline for this course in myCourses. Class sessions may be recorded, and your image, voice and name may be disclosed to classmates. Note that by remaining in sessions that are being recorded, you are agreeing to the recording.

Evaluation

Assessment type	Date	% of final grade
1st Quiz MCQs will test students' understanding of classes 1 through 5.	February 8 Class hour	25%
2nd Quiz MCQs will test students' understanding of classes 7 through 10.	March 22 Class hour	25%
Research proposal Two-page research proposal assignment.	April 12 11:59pm	20%
Final exam Cumulative exam with short-answer questions.	TBD TBD	30%

About the research proposal:

You will be asked to write a two-page research proposal in the spirit of the papers seen in class. Specifically, you will be asked to suggest a way to identify a causal relationship which links environment and development. Your research proposal will include a concise review of literature, a research question, a suggested identification strategy and details on the context (localization, data that could be used etc.). Your research proposal should be realistic but you will not be asked to actually perform the analysis. Instead, you will be asked to show that you can navigate the literature (even if you don't understand everything) and that you can suggest an identification strategy corresponding to your setting. In other words, you will be asked to show that you can mobilize the notions discussed in class when asking a new research question.

You can either do this work alone or in group (of 3 students maximum). By **February 8**, you should email that you either (i) intend to work alone or (ii) formed a group or (iii) wish to be part of a group that I will assign myself based on subject preferences and availability/time zones. By **March 1st**, you should have validated your research idea with me, by email, during my office hours or upon appointment. Deadline for submitting your research proposal is on the last day of class: **April 12**.

About the exams:

The first two exams will take the form of quizzes. Each quiz is designed to be answered in less than 60 minutes. The final exam will correspond to a series of open-ended questions requiring short answers and will cover all the material seen in class. Sample of questions in the spirit of the exams will be provided to students in advance.

All exams (final and quiz) will be accessible for a period of 48 hours. Once you access the exam, you will have 3 hours to share your answers on myCourses.

Exams will test whether students are able to mobilize the concepts seen in class. Questions will be derived from the slides but **some will be easier to answer for students who attended/listened to the lectures**. This is why students are encouraged to engage during the lectures.

Exams should reflect personal work and therefore cannot be done in groups.

Absence to midterms and/or the final exam:

If you miss **either** the first or second midterm, the weight of the missed exam will be placed on your final exam (which will be worth 55%). No medical note is required.

If you miss **both** midterms or the final exam, I will request a medical note within the delay set by the university and you will be able to write a make up exam.

Either way, I strongly encourage you to reach out to me as soon as possible if you encounter any issue with respect to exam taking.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

Optional course material – Non mandatory readings

- Almås, I., Auffhammer, M., Bold, T., Bolliger, I., Dembo, A., Hsiang, S. M., Kitamura, S., Miguel, E., and Pickmans, R. (2019). Destructive behavior, judgment, and economic decision-making under thermal stress. Technical report, National Bureau of Economic Research.
- Auffhammer, M., Hsiang, S. M., Schlenker, W., and Sobel, A. (2013). Using weather data and climate model output in economic analyses of climate change. *Review of Environmental Economics and Policy*, 7(2):181–198.
- Burgess, R., Costa, F., and Olken, B. A. (2019). The brazilian amazon’s double reversal of fortune. *NBER*.
- Burgess, R., Deschenes, O., Donaldson, D., and Greenstone, M. (2017). Weather, climate change and death in india. *University of Chicago*.
- Burke, M., Hsiang, S. M., and Miguel, E. (2015). Climate and conflict.
- Dell, M., Jones, B. F., and Olken, B. A. (2012). Temperature shocks and economic growth: Evidence from the last half century. *American Economic Journal: Macroeconomics*, 4(3):66–95.
- Deschênes, O. and Greenstone, M. (2011). Climate change, mortality, and adaptation: Evidence from annual fluctuations in weather in the us. *American Economic Journal: Applied Economics*, 3(4):152–85.
- Duflo, E., Greenstone, M., Pande, R., and Ryan, N. (2013). Truth-telling by third-party auditors and the response of polluting firms: Experimental evidence from india. *The Quarterly Journal of Economics*, 128(4):1499–1545.
- Heyes, A. and Zhu, M. (2019). Air pollution as a cause of sleeplessness: Social media evidence from a panel of chinese cities. *Journal of Environmental Economics and Management*, 98:102247.
- Miguel, E. (2005). Poverty and witch killing. *The Review of Economic Studies*, 72(4):1153–1172.
- Schlenker, W. and Roberts, M. J. (2009). Nonlinear temperature effects indicate severe damages to us crop yields under climate change. *Proceedings of the National Academy of sciences*, 106(37):15594–15598.

McGill Policy Statements

Language of Submission

In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded. This does not apply to courses in which acquiring proficiency in a language is one of the objectives.

Conformément à la Charte des droits de l’étudiant de l’Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l’un des objets est la maîtrise d’une langue).

Academic Integrity

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see McGill’s [guide to academic honesty](#) for more information).

L’université McGill attache une haute importance à l’honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l’on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l’étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le [guide pour l’honnêteté académique](#) de McGill).

Additional Statements

The [University Student Assessment Policy](#) exists to ensure fair and equitable academic assessment for all students and to protect students from excessive workloads. All students and instructors are encouraged to review this Policy, which addresses multiple aspects and methods of student assessment, e.g. the timing of evaluation due dates and weighting of final examinations.

As the instructor of this course I endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me and the [Office for Students with Disabilities](#), 514-398-6009.

McGill University is on land which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. We acknowledge and thank the diverse Indigenous people whose footsteps have marked this territory on which peoples of the world now gather.

[End-of-course evaluations](#) are one of the ways that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You will be notified by e-mail when the evaluations are available. Please note that a minimum number of responses must be received for results to be available to students.”