

Winter 2023

Geography and Environmental Studies

Climate Change: Social Science Perspectives

GEOG 2500/ENST 2500

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Meeting day, time, and room

Mondays, 11:35 am - 1:25 pm

Office hours

Tuesdays, 9-10 am, online, by appointment.

Tutorials

A1 – Tue, 08:35 - 09:25

A2 – Mon, 10:35 - 11:25

A3 – Mon, 09:35 - 10:25

A4 – Tue, 11:35 - 12:25

COURSE DESCRIPTION

The course provides an overview of the historical origins and possible socio-economic drivers of climate change. The first sessions will present an introduction to the physical basis, while the subsequent sessions will trace the historical process leading to the construction of the modern economic system, examine the main socio-economic drivers of greenhouse gas emissions, summarize theoretically the features of such system, and discuss the possible alternative pathways forward. The lectures will provide a panoramic synopsis of these topics, to be complemented by the mandatory readings and thematic tutorials. The course aims to provide the basic tools to discuss the climate crisis from a social science perspective, but also as citizens in our community, since it is arguably the most important issue of our century.

Learning Outcomes

By the end of this course, students will be able to:

- Describe the historical origins of climate change.
- Identify its socio-economic drivers.
- Describe the main features of our contemporary economic system.
- Reflect critically on the different technological, economic and political pathways to overcome the crisis.
- Participate as informed citizens in community discussions about these topics.

Texts

All readings in the course calendar will be available on the course website at Brightspace and the library. Please note that assigned texts may be adjusted slightly over the course of the term depending on how our class conversations develop. No minor changes to readings will be made within less than a week of the class session in question.

COURSE CALENDAR

	Topics and required readings	Exams and assignments
Week 1 January 9	<p>Introduction</p> <p>McNeill, John Robert and Peter Engelke (2014) <i>The Great Acceleration: An Environmental History of the Anthropocene since 1945</i>. Cambridge: The Belknap Press of Harvard University Press. pp. 63-82.</p>	
Week 2 January 16	<p>The physical basis of climate change</p> <p>Guest lecture by Professor Derek Mueller.</p> <p>IPCC (2021) Summary for Policymakers. In: <i>Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change</i> [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3-32, doi: 10.1017/9781009157896.001. Available here.</p>	
Week 3 January 23	<p>Searching for the historical origins: the English Industrial Revolution, colonialism, and population growth</p> <p>Hobsbawm, Eric (1996 [1962]) <i>The Age of Revolution: 1789–1848</i>, New York: Vintage books. Chapter 2, pp. 27-52.</p>	
Week 4 January 30	<p>The old world of peasants and nomads</p> <p>Cronon, William (2003) <i>Changes in the Land: Indians, Colonists, and the Ecology of New England</i>, 20th anniversary edition, New York: Hill & Wang. Chapter 3, pp. 34-53.</p> <p>Hobsbawm, Eric (1996 [1962]) <i>The Age of Revolution: 1789–1848</i>, New York: Vintage books. Chapter 8, pp. 149-167.</p>	
Week 5 February 6	<p>Towards a Capitalist world: the Global Industrial Revolution</p> <p>Hobsbawm, Eric (1996 [1962]) <i>The Age of Revolution: 1789–1848</i>, New York: Vintage books. Chapter 9, pp. 168-181.</p> <p>Hobsbawm, Eric (1994) <i>The Age of Extremes: The Short Twentieth Century, 1914–1991</i>, London: Michael Joseph. Chapter 9, pp. 257-286, Chapter 10, pp. 287-295, and Chapter 14, pp. 403- 416.</p>	

Week 6 February 13		Midterm exam
Week 7	Break Classes are suspended.	
Week 8 February 27	The Capitalist economic system: its economic metabolism	
Week 9 March 6	The Capitalist economic system: its socio-nature metabolism I Smil, Vaclav (2017) <i>Energy and Civilization: A History</i> , London: The MIT press. Chapter 6, pp. 295-344.	
Week 10 March 13	The Capitalist economic system: its socio-nature metabolism II	
Week 11 March 20	Overcoming the climate crisis I: individual choices, green capitalism, and technological fixes Green, Jessica F. (2021) “Does carbon pricing reduce emissions? A review of ex-post analyses”, <i>Environ. Res. Lett.</i> , 16, 043004, doi: 10.1088/1748-9326/abdae9, pp. 1-14. Schendler (2021) “The Complicity of Corporate Sustainability”. <i>Stanford Social Innovation Review</i> . Fancy (2021) “BlackRock hired me to make sustainable investing mainstream. Now I realize it’s a deadly distraction from the climate-change threat” , <i>The Globe and Mail</i> . Klein, Naomi (2015) <i>This Changes Everything: Capitalism vs. the Climate</i> , Vintage Canada. Chapter 8, pp. 256-290.	
Week 12 March 27	Overcoming the climate crisis II: corporate power and social movements Brulle and Downie (2022) “Following the money. Trade associations, political activity and climate change”, <i>Climatic Change</i> , 175:11, pp. 1-16. InfluenceMap (2019) <i>Big Oil’s Real Agenda on Climate Change. How the oil majors have spent \$1Bn since Paris on narrative capture and lobbying on climate</i> , pp. 4-20.	

	<p>McGrath (2022) "COP27. Sharp rise in fossil fuel industry delegates at climate summit", BBC News.</p> <p>The Listening Post (2021) "Climate crisis: Can journalists make the world care?", Al Jazeera. (Watch the first part of the show).</p> <p>Franta and Supran (2017) "The fossil fuel industry's invisible colonization of academia", The Guardian.</p> <p>Monbiot (2021) "Capitalism is killing the planet – it's time to stop buying into our own destruction", The Guardian.</p>	
Week 13 April 3	<p>A post-carbon future</p> <p>A message from the future II: the years of repair.</p>	
Week 14		Final exam

Further reading:

For those of you interested in learning more, during the term or after, here is a brief introductory bibliography that can be useful. These are not mandatory readings.

Natural sciences

- IPCC (2023) *Climate Change 2023. Synthesis Report*.
- Armstrong, et al. (2022) "Exceeding 1.5°C global warming could trigger multiple climate tipping points".
- Crutzen and Stoermer (2000) "The Anthropocene".
- Crutzen, Paul (2002) "Geology of mankind".
- Crutzen and Steffen (2003) "How long have we been in the Anthropocene Era?"
- Friedlingstein, et. al. (2020) "Global Carbon Budget 2020".
- Hansen, James (2009) *Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity*.
- Minx, et al. (2021) "A comprehensive and synthetic dataset for global, regional, and national greenhouse gas emissions by sector 1970–2018 with an extension to 2019".
- Rockström, et. al. (2009a) "A safe operating space for humanity".
- Rockström, et. al. (2009b) "Planetary Boundaries. Exploring the Safe Operating Space for Humanity".
- Ruddiman, William F. (2014) *Earth's Climate Past and Future*.
- Schneider, Steven H. (1998) *Laboratory Earth: The Planetary Gamble We Can't Afford to Lose*.
- Smil, Vaclav (2001) *Enriching the Earth: Fritz Haber, Carl Bosch and the Transformation of World Food Production*.
- Smil, Vaclav (2017) *Energy and Civilization: A History*.
- Steffen, et. al. (2015) "Planetary boundaries. Guiding human development on a changing planet".

History of climate science

- Oreskes, Naomi and Erik M. Conway (2010) *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*.
Weart, Spencer R. (2003) *The Discovery of Global Warming*.

Economic, social, and environmental history

- Ashton, T. S. (1948) *The Industrial Revolution 1760-1830*.
Braudel, F. (1979a) *Civilization and Capitalism. 15th-18th Century, Volume I. The Structure of Everyday Life*.
Braudel, F. (1979b) *Civilization and Capitalism, 15th-18th Century, Volume II. The Wheels of Commerce*.
Braudel, F. (1979c) *Civilization and Capitalism, 15th-18th Century, Volume III. The Perspective of the World*.
Cronon, William (1983) *Changes in the Land: Indians, Colonists and the Ecology of New England*.
Cronon, William (1991) *Nature's Metropolis: Chicago and the Great West*.
Hobsbawm, Eric (1962) *The Age of Revolution 1789-1848*.
Hobsbawm, Eric (1975) *The Age of Capital. 1848-75*.
Hobsbawm, Eric (1987) *Age of Empire 1875-1914*.
Hobsbawm, Eric (1994) *The Age of Extremes. The Short Twentieth century*.
Hobsbawm, Eric (1977) *Industry and empire*.
Hudson, Pat (1992) *The Industrial Revolution*.
Mantoux, Paul, (1905) *The industrial revolution in the eighteenth century*.
McNeill, John Robert (2001) *Something New Under the Sun: An Environmental History of the Twentieth-Century World*.
McNeill, John Robert and Peter Engelke (2014) *The Great Acceleration: An Environmental History of the Anthropocene Since 1945*.
Williams, Michael (2002) *Deforesting the Earth: From Prehistory to Global Crisis*.
Wolf, Eric R. (1982) *Europe and the People Without History*.

Economics

- Hickel, Jason (2021) *Less is more: how degrowth will save the world*.
Marx, Karl (1976 [1867]) *Capital*. Vol. I.
Marx, Karl (1978 [1885]) *Capital*. Vol. II.
Marx, Karl (1981 [1894]) *Capital*. Vol. III.
Piketty, Thomas (2013) *Capital in the Twenty-First Century*.

Climate politics and culture

- Boykoff and Boykoff (2004) "Balance as bias. Global warming and the US prestige press".
Chomsky, Noam and Robert Pollin (2020) *Climate Crisis and the Global Green New Deal: The Political Economy of Saving the Planet*.
Mann, Michael E. (2021) *The New Climate War*.
McAllister, et al. (2021) "Balance as bias, resolute on the retreat? Updates & analyses of newspaper coverage in the United States, United Kingdom, New Zealand, Australia and Canada over the past 15 years".
Supran, Geoffrey and Naomi Oreskes (2017, 2020) "Assessing ExxonMobil's climate change communications (1977–2014)" and "Addendum".

EVALUATION

Students will be mainly evaluated on their knowledge and intellectual skills (although the lectures and tutorials will aim to provide cognitive strategies not necessarily evaluated).

1. Attendance and Participation (15%)

This course is scheduled as a series of lectures, and attendance and participation are required: the course and your learning depend on your coming to class well prepared and on a regular basis. Together, attendance (10%) and participation (5%) represent a significant percentage of your total mark. We will take attendance at each class (attendance marks are divided equally by the number of classes). The participation mark aims to reward only active and insightful engagement with the lecture and the assigned readings, both in the form of questions or comments.

2. Tutorials (25%)

Students are expected to participate in recurrent tutorial sessions led by the TAs. The purpose of the tutorials is to do some basic research and discuss climate change issues related directly to Canada; dissipate doubts and engage with the assigned readings; reflect critically on a documentary (viewed at the student's convenience) in conjunction with your peers; and build or consolidate basic academic skills. Students are expected to draw connections to lectures and readings and show engagement with the materials and will be evaluated accordingly.

3. Midterm exam (25%)

The test will evaluate the students' gained knowledge from the first block of topics in the term. Multiple-choice and short-answer questions will cover both lecture and reading contents. The test will take place at the regular scheduled class day and time, according to the course calendar.

4. Final exam (35%)

The final test will include all lecture topics and assigned readings. Since it will represent the single largest fraction of the grade, three options that accommodate better to the student's skills are provided. Students must sign up for one by reading week.

Option 1. Oral exam. Students will be asked a number of questions during a period of 15 to 30 minutes.

Option 2. Written test. The final exam will be a combination of multiple-choice, short-answer, and short-essay questions. It will be administrated during the examination period.

Option 3. Essay (only for the 3rd and 4th year students). This paper is meant to help you engage with the knowledge gained from readings, lectures, and tutorials while help you developing research and writing skills. You will research and write a 1,500-2,500-word (excluding references) academic essay on a topic of your choosing amongst the predetermined ones provided in advance. More details will be provided during the term. The paper is due by the end of the university examination period.

Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.

COURSE POLICIES

Communication and E-mail

The fundamental information for this course is contained in this syllabus. I will communicate other relevant information about the course to you via Brightspace. If you have more in-depth questions about the lectures and course material, book an appointment for a meeting during my office hours. If you are not able to make office hours due to a valid reason, we can arrange for an appointment at another time during the week in case of important matters. For any general consultation and advice, communicate with your TA to discuss them.

Late penalties

Late penalties will be enforced to ensure fairness in grading among students. Late assignments will be subject to a reduction of 10% of the overall assignment mark for each calendar day past the due date, unless accompanied by adequate written documentation for a legitimate reason.

Extenuating circumstances

Reasonable accommodations will be made for students with extenuating circumstances (i.e. out of your control). Missed classes and tutorials must be reasonably justified to your TA. In case of missed exams due to unforeseen circumstances, current university regulations will be followed.

Plagiarism

The University Academic Integrity Policy defines plagiarism as “presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.” This includes reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, artworks, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else;
- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings without appropriate acknowledgement;
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one’s own; and

- failing to acknowledge sources through the use of proper citations when using another’s work and/or failing to use quotations marks.

Plagiarism is a serious offence that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of “F” for the course.

Statement on Student Mental Health

As a university student you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you. Here is a list that may be helpful:

Emergency Resources (on and off campus):

<https://carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

Carleton Resources:

- Mental Health and Wellbeing: <https://carleton.ca/wellness/>
- Health & Counselling Services: <https://carleton.ca/health/>
- Paul Menton Centre: <https://carleton.ca/pmc/>
- Academic Advising Centre (AAC): <https://carleton.ca/academicadvising/>
- Centre for Student Academic Support (CSAS): <https://carleton.ca/csas/>
- Equity & Inclusivity Communities: <https://carleton.ca/equity/>

Off Campus Resources:

- Distress Centre of Ottawa and Region: (613) 238-3311 or TEXT: 343-306-5550, <https://www.dcottawa.on.ca/>
- Mental Health Crisis Service: (613) 722-6914, 1-866-996-0991, <http://www.crisisline.ca/>
- Empower Me: 1-844-741-6389, <https://students.carleton.ca/services/empower-me-counselling-services/>
- Good2Talk: 1-866-925-5454, <https://good2talk.ca/>
- The Walk-In Counselling Clinic: <https://walkincounselling.com>

Statement on Pandemic Measures

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are [a number of actions you can take](#) to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you’re sick, washing your hands and maintaining proper respiratory and cough etiquette.

Feeling sick?

Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you should follow Carleton’s [symptom reporting protocols](#).

Masks:

Masks are no longer mandatory in university buildings and facilities. However, we continue to recommend masking when indoors, particularly if physical distancing cannot be maintained. We are aware that personal preferences regarding optional mask use will vary greatly, and we ask that we all show consideration and care for each other during this transition.

Vaccines:

While proof of vaccination is no longer required to access campus or participate in in-person Carleton activities, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible and submit their booster dose information in [cuScreen](#) as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 response and health and safety requirements please see the [University's COVID-19 website](#) and review the [Frequently Asked Questions \(FAQs\)](#). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca.

Academic accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For accommodation regarding a formally-scheduled final exam, you must complete the Pregnancy Accommodation Form ([click here](#)).

Religious obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details [click here](#).

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable).

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported

through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <https://carleton.ca/equity/sexual-assault-support-services>

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation will be provided to students who compete or perform at the national or international level. Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>