Climate Change and the Commons
ECON1345

Maximiliano Garcia*

January 20, 2026

Class Hours: Wednesday, 3:00 p.m. to 5:30 p.m.
Class Location: Smith-Buonanno Hall 201.
Office Hours: TBD.
Office Hours Location: 25 George Street, office 104, or over Zoom.

1 Course Overview

This discussion-based seminar course aims to help students understand the different political challenges related to climate change. We will begin with an overview of the causes and consequences of climate change, emphasizing how the average effects conceal net winners and losers under the current status quo. Subsequently, we will step back to build a conceptual framework to understand the complexities underlying the Tragedy of the Commons, as well as the basics of market and non-market solutions. Finally, we will return to climate change to discuss the challenges of addressing it, both globally and within individual countries, that stem from the Tragedy of the Commons.

Learning Goals

The objective is to equip students with the tools needed to comprehend available evidence, analyze policies, understand the political challenges involved, and propose politically viable solutions to climate change and various other environmental issues.

Prerrequisites

This course has ECON1620 (Introduction to Econometrics) and ECON1110 (Intermediate Microeconomics) as prerequisites. If any student wants to enroll in the class without meeting these prerequisites, please reach out to the instructor.

2 Evaluation

Grading

1. Class participation (30%)
2. Homework (30%)
3. Case analysis (40%)

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1. **Class participation** (30%)
   Students are expected to read the mandatory readings in advance of each class and submit a question or critique about at least one of them. Alternatively, students can opt to read a related paper and present it to the class in a 5-minute presentation at the beginning of the session. The grade of this item will be calculated based on the following points system: the total of points will be equal to the number of sessions with readings minus 2, and the students will get 1 point for the submission of questions each session. Questions, critiques or presentations that are exceptionally insightful will get 2 points. Questions that reflect a superficial reading will get 0 points. If any student accumulates more points than the total, they may be used as credit for the Homework item.

   Attendance Policy: This is an in-person class, where participation is essential. There are 2 unexcused absences allowed during the course. In addition, there are 2 excused absences allowed during the course. Exceeding these limits will result in failing the class. Students should contact the instructor promptly in the case of any exceptional circumstance that may prevent them from meeting these requirements.

2. **Homework** (30%)
   There will be four homework assignments, discussing and illustrating the concepts covered in class. These assignments will also require students to apply these concepts to different cases.

3. **Case analysis** (40%)
   Students will choose a real-world case of environmental conflict, analyze it, identify the different actors, explore their incentives to reach an agreement, and discuss various policies and potential solutions to resolve the conflict. Two intermediate deliverables (a Proposal and an Intermediate Report) will be required throughout the semester, culminating in a Final Report and a 15-minute presentation during the Reading Period.

Accessibility and Accommodations

Brown University is committed to full inclusion of all students. Please inform the instructor early in the term if you may require accommodations or modification of any of course procedures. Please speak with the instructor after class, during office hours, or by appointment. If any student needs accommodations around online learning or in classroom accommodations, please reach out to Student Accessibility Services (SAS) for their assistance (`seas@brown.edu`, 401-863-9588). Students in need of short-term academic advice or support can contact one of the academic deans in the College.

Academic Integrity

Plagiarism and cheating are serious offenses. Please refer to the Brown University Academic and Student Conduct Codes for details regarding Brown University's policy on academic integrity and penalties for violating the academic code. Anyone found cheating on an evaluation will receive a zero, on top of the corresponding penalty. The instructor will be the sole arbiter of what it means to be "found cheating".

Course Time Allocation

Over 13 weeks, students will spend 2.5 hours per week in class (32.5 hours total) and 9 hours per week doing course reading, viewing assigned media content, and preparing questions about the reading (117 hours total). There are four short homeworks (20 hours total) and a final project (15 hours).

3 Course Schedule

The tentative schedule for the course is below. Note: This course outline is subject to change; please consult Canvas for the most up-to-date information.

Weeks 1-4. General diagnosis: climate change, costs and distribution of costs

- Week 1 General diagnosis; our current understanding of the impacts of climate change.
- Week 2 General diagnosis; our current understanding of the impacts of climate change.
- Week 3: Understanding the costs of climate change and its distribution: how we have changed our approach on measuring climate change costs, over time.
- Week 4: Understanding the costs of climate change and its distribution: how we have changed our approach on measuring climate change costs, over time.

Weeks 5-9. A step back: theory and evidence on the Commons

- Week 5: The Tragedy of the Commons. An introduction to collective action problems.
- Week 6: An introduction to pigouvian taxes.
- Week 7: Market solutions. An introduction to cap-and-trade policies.
- Week 8: Continuation of Market Solutions. Non-market solutions. Beyond markets and states.
- Week 9: Non-market solutions. Beyond markets and states.

Weeks 10-13: The challenge of addressing climate change

- Week 10: An overview of policies and challenges
- Week 11: The (domestic and international) challenge of convincing people to take action.
- Week 12: Political consequences of environmental policies
- Week 13: Ethics of Climate Change: What to do? Should we do something?

4 Required Readings

The reading for this course include the mandatory readings, along with supplementary secondary academic literature. All required readings will be on Canvas for you to access. The mandatory readings will be announced at the beggining of each section of the course.

I will make mention of additional resources from time to time, which may prove useful to consult. The other references are optional additional reading, all of which should also be available on JSTOR or in the library if you want to explore a particular topic in more depth.

General diagnosis: climate change, costs and distribution of costs

- General diagnosis: our current understanding of the impacts of climate change.
  - IPCC (2023). "Summary for Policymakers." In: *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.* Core Writing Team, H. Lee and J. Romero (eds.). IPCC, Geneva, Switzerland, pp. 1–34. doi: 10.59327/IPCC/AR6-9789291691647.001
  - Gates, B. (2021). *How to Avoid a Climate Disaster*, Chapter 3.
  - Vox (2018). "9 Questions About Climate Change You Were Too Embarrassed to Ask." `https://www.vox.com/science-and-health/2017/6/1/15724164/9-questions-climate-change-too-embarrassed-to-ask`
  - Pizer, W. (2017). "What's the Damage From Climate Change?" *Science*, 356, 1330–1331.
- Understanding the costs of climate change and its distribution.
  - Hsiang, S., Kopp, R., Jina, A., et al. (2017). "Estimating Economic Damage From Climate Change in the United States." *Science*, 356(6345), 1362–1369.
  - Trancoso, R., Syktus, J., Allan, R. P., et al. (2024). "Significantly Wetter or Drier Future Conditions for One to Two Thirds of the World's Population." *Nature Communications*, 15(1), 483.
  - Zhao, Q., Guo, Y., Ye, T., et al. (2021). "Global, Regional, and National Burden of Mortality Associated With Non-Optimal Ambient Temperatures From 2000 to 2019: A Three-Stage Modelling Study." *The Lancet Planetary Health*, 5(7), e415–e425.
  - Carleton, T., Jina, A., Delgado, M., et al. (2022). "Valuing the Global Mortality Consequences of Climate Change Accounting for Adaptation Costs and Benefits." *The Quarterly Journal of Economics*, 137(4), 2037–2105.
  - Hsiang, S. (2016). "Climate Econometrics." *Annual Review of Resource Economics*, 8(1), 43–75.
- How we have changed our perception about climate change costs over time.
  - Oreskes, N., and Conway, E. M. (2011). *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues From Tobacco Smoke to Global Warming.* Bloomsbury Publishing USA. Chapter 6.
  - Franta, B. (2022). "Weaponizing Economics: Big Oil, Economic Consultants, and Climate Policy Delay." *Environmental Politics*, 31(4), 555–575.

A Step Back: Theory and Evidence on the Commons

- The tragedy of the commons: an introduction to collective action problems.
  - Hardin, G. (1968). "The Tragedy of the Commons: The Population Problem Has No Technical Solution." *Science*, 162(3859), 1243–1248.
  - McLachlan, R. (2019, June 4). "Climate Change Is a Fourfold Tragedy." *Scientific American.* `https://blogs.scientificamerican.com/observations/climate-change-is-a-fourfold-tragedy/`
- Market solutions: an introduction to Pigouvian taxes and cap-and-trade policies.
  - Keohane, N. O., and Olmstead, S. M. (2016). *Markets and the Environment.* Chapter 5.

  - Hayek, F. (1945). "The Use of Knowledge in Society." *The American Economic Review*, 35(4), 519–530.
  - Coase, R. H. (1960). "The Problem of Social Cost." *The Journal of Law and Economics*, 3, 1–44.
  - Farrell, J. (1987). "Information and the Coase Theorem." *Journal of Economic Perspectives*, 1(2), 113–129.
  - Haab, T. (2006, January 23). "What Is the Coase Theorem, Really?" Blog post. `https://www.env-econ.net/2006/01/what_is_the_coa.html`
  - Weitzman, M. (1974). "Prices vs. Quantities." *The Review of Economic Studies*, 41(4), 477–491.
  - Keohane, N. O., and Olmstead, S. M. (2016). *Markets and the Environment*. Chapter 8.
  - Colmer, J., Martin, R., Muûls, M., and Wagner, U. J. (2024). "Does Pricing Carbon Mitigate Climate Change? Firm-Level Evidence From the European Union Emissions Trading System." *The Review of Economic Studies*. https://doi.org/10.1093/restud/rdae055.
  - Calel, R., Colmer, J., Dechezleprêtre, A., and Glachant, M. (2024). "Do Carbon Offsets Offset Carbon?" *American Economic Journal: Applied Economics*.
  - Greenstone, M., Pande, R., Ryan, N., and Sudarshan, A. (2025). "Can pollution markets work in developing countries? Experimental evidence from India." *The Quarterly Journal of Economics*. https://doi.org/10.1093/qje/qjaf009
  - Schmalensee, R., and Stavins, R. N. (2017). "Lessons Learned From Three Decades of Experience With Cap and Trade." *Review of Environmental Economics and Policy*.

- Non-market solutions: beyond markets and states.
  - Ostrom, E., et al. (1999). "Revisiting the Commons: Local Lessons, Global Challenges." *Science*, 284, 278–282.
  - Olson, M. (2012). "The Logic of Collective Action" [1965], pp. 5–16.
  - Levin, J. (2006). Notes on "Repeated Games I: Perfect Monitoring." `https://web.stanford.edu/~jdlevin/Econ%20286/Repeated%20Games%20I.pdf`
  - Ostrom, E. (2010). "Beyond Markets and States: Polycentric Governance of Complex Economic Systems." *American Economic Review*, 100(3), 641–672.
  - Dietz, T., Ostrom, E., and Stern, P. C. (2003). "The Struggle to Govern the Commons." *Science*, 302(5652), 1907–1912.
  - Agrawal, A. (2001). "Common Property Institutions and Sustainable Governance of Resources." *World Development*, 29(10), 1649–1672.
  - Baragwanath, K., and Bayi, E. (2020). "Collective Property Rights Reduce Deforestation in the Brazilian Amazon." *Proceedings of the National Academy of Sciences*, 117(34), 20495–20502.
  - Ryan, N., and Sudarshan, A. (2022). "Rationing the Commons." *Journal of Political Economy*, 130(1), 210–257.

The Challenge of Addressing Climate Change

- An overview of policies and challenges.
  - Tirole, J. (2018). *Economics for the Common Good*, Chapter 8.
  - Harris, J. M., and Roach, B. (2017). *Environmental and Natural Resource Economics: A Contemporary Approach*. Routledge. Chapter 18.

  - Keohane, R., and Victor, D. (2016). "Cooperation and Discord in Global Climate Policy." *Nature Climate Change*, 6, 570–575.
  - Guy, J., Shears, E., and Meckling, J. (2023). "National Models of Climate Governance Among Major Emitters." *Nature Climate Change*, 13, 189–195.

- The (domestic and international) challenge of convincing people to take action.
  - Tyson, A. (2024). "How Americans View Climate Change and Policies to Address the Issue." Pew Research Center Report, Washington, DC.
  - Bush, S., and Clayton, A. (2023). "Facing Change: Gender and Climate Change Attitudes Worldwide." *American Political Science Review*, 117(2), 591–608.
  - Keohane, R. O. (2015). "The Global Politics of Climate Change: Challenge for Political Science." *PS: Political Science and Politics*, 48(1), 19–26.
  - Djourelova, M., Durante, R., Motte, E., and Patacchini, E. (2023). "Experience, Narratives, and Climate Change Beliefs." Working paper.
  - Bosetti, V., Weber, E., Berger, L., Budescu, D. V., Liu, N., and Tavoni, M. (2017). "COP21 Climate Negotiators' Responses to Climate Model Forecasts." *Nature Climate Change*, 7(3), 185–190.
  - Andre, P., Boneva, T., Chopra, F., and Falk, A. (2024). "Misperceived Social Norms and Willingness to Act Against Climate Change." *Review of Economics and Statistics*, 1–46.

- Incentives faced by politicians and bureaucrats.
  - Colantone, I., Di Lonardo, L., Margalit, Y., and Percoco, M. (2024). "The Political Consequences of Green Policies: Evidence From Italy." *American Political Science Review*, 118(1), 108–126.
  - Burgess, R., Hansen, M., Olken, B. A., Potapov, P., and Sieber, S. (2012). "The Political Economy of Deforestation in the Tropics." *The Quarterly Journal of Economics*, 127(4), 1707–1754.
  - Pailler, S. (2018). "Re-Election Incentives and Deforestation Cycles in the Brazilian Amazon." *Journal of Environmental Economics and Management*.
  - Dipoppa, G., and Gulzar, S. (2024). "Bureaucrat Incentives Reduce Crop Burning and Child Mortality in South Asia." *Nature*, 634(8036), 1125–1131.

- Redistribution across generations.
  - Chopra, F., Falk, A., and Graeber, T. (2024). "Intertemporal Altruism." *American Economic Journal: Microeconomics*, 16(1), 1–30.
  - Bosetti, V., Dennig, F., Liu, N., et al. (2022). "Forward-Looking Belief Elicitation Enhances Intergenerational Beneficence." *Environmental Resource Economics*, 81, 743–761.

- What to do?
  - Falkner, R. (2016). "The Paris Agreement and the New Logic of International Climate Politics." *International Affairs*, 92(5), 1107–1125.
  - Meckling, J., and Karplus, V. J. (2023). "Political Strategies for Climate and Environmental Solutions." *Nature Sustainability*, 1–10.

- Should we do something?
  - Gardiner, S. M. (2004). "Ethics and Global Climate Change." *Ethics*, 114, 555–600.

– Singer, P. (2006). "Ethics and Climate Change: A Commentary on MacCracken, Toman and Gardiner." *Environmental Values*, 15(3), 415–422.
– Broome, J. (2012). *Climate Matters: Ethics in a Warming World*. Chapter 4.
– Palmer, C., McShane, K., and Sandler, R. (2014). "Environmental Ethics." *Annual Review of Environment and Resources*, 39, 419–442.