

# Environmental Economics: Climate Change

**2023-2024 Academic Year**

**Master of Research in Economics, Finance and Management**

## 1. Description of the subject

- Environmental Economics: Climate Change
- Code: 32589
- Total credits: 3 ECTS      Workload: 75 hours
- Term: 3rd
- Type of subject: Optative
- Department of Economics and Business
- Teaching team:  
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## 2. Teaching guide

- **Introduction**

Climate change is arguably the most complex and pressing environmental problem the world has ever faced. This course attacks the problem of climate change from the perspective of economics. The aim is to provide you with an understanding of some of the relevant economic issues on climate change and the existing debates. Hopefully, it will expand your view of economics and stimulate your research ideas.
- **Enrollment**

This is a course designed for the UPF Master of Research students. During the second quarter, we offer a course covering similar topics that is open to all Master students of the BSE
- **Teaching methodology**

The course will combine lecture-style sessions and seminar-style. Lecture sessions will serve as an introduction and general view of the topics, while seminar sessions will focus on one or two particular papers that will be analyzed more in-depth. Students must have read the papers beforehand and be ready to present and discuss them during the class.

- **Contents<sup>1</sup>**

- \* Main reference

- \*\* Mandatory reading

- 1. Introduction. Climate Change for Economists: Science, Facts, and Scenarios**

- \*IPCC (2023) AR6 Synthesis Report. <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

- Hsiang, S., & Kopp, R. E. (2018). An economist's guide to climate change Science. *Journal of Economic Perspectives*, 32(4), 3–32.

- 2. Climate damages**

- \*\*Nath, I. B., Ramey, V. A., & Klenow, P. J. (2023). *How Much Will Global Warming Cool Global Growth?* Mimeo. [http://klenow.com/Nath\\_Ramey\\_Klenow.pdf](http://klenow.com/Nath_Ramey_Klenow.pdf)

- Dietz, S., Rising, J., Stoerk, T., & Wagner, G. (2021). Economic impacts of tipping points in the climate system. *Proceedings of the National Academy of Sciences*, 118(34), e2103081118.

- 3. Climate Adaptation**

- \*\*Carleton, T., Jina, A., Delgado, M., Greenstone, M., Houser, T., Hsiang, S., Hultgren, A., Kopp, R.E., McCusker, K.E., Nath, I. and Rising, J., 2022. Valuing the global mortality consequences of climate change accounting for adaptation costs and benefits. *The Quarterly Journal of Economics*, 137(4), pp.2037-2105.

- Burke, M. and Emerick, K., 2016. Adaptation to climate change: Evidence from US agriculture. *American Economic Journal: Economic Policy*, 8(3), pp.106-140.

- 4. Integrated Assessment Models (IAMs)**

- \*\*Barrage, L., & Nordhaus, W. D. (2023). Policies, Projections, and the Social Cost of Carbon: Results from the Dice-2023 Model. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4413849>

- \*\*Golosov, Mikhail, John Hassler, Per Krusell, and Aleh Tsyvinski. 2014. "Optimal Taxes on Fossil Fuel in General Equilibrium." *Econometrica* 82 (1): 41–88.

- Hassler, John, Per Krusell and Conny Olovsson (2020) *The Climate and The Economy*. Mimeo. <http://hassler-j.ies.su.se/courses/climate/Book200320.pdf>

- 5. Other Approaches to the Economics of Climate Change**

- \*\*Stern, N., Stiglitz, J., & Taylor, C. (2022). The economics of immense risk, urgent action and radical change: towards new approaches to the economics of climate change. *Journal of Economic Methodology*, 29(3), 181–216. <https://doi.org/10.1080/1350178X.2022.2040740>

- \*Fleurbaey, M., Ferranna, M., Budolfson, M., Dennig, F., Mintz-Woo, K., Socolow, R., Spears, D., & Zuber, S. (2019). The Social Cost of Carbon: Valuing Inequality, Risk, and Population for Climate Policy. *Monist*, 102(1), 84–109. <https://doi.org/10.1093/monist/onv023>

- \*Llavador, H., J.E. Roemer and J. Silvestre (2015) *Sustainability for a Warming Planet*. Harvard University Press. [Introduction]

- 6. Trade and Climate Change**

- \*\*Shapiro, J.S. and Walker, R., 2018. Why is pollution from US manufacturing declining? The roles of environmental regulation, productivity, and trade. *American Economic Review*, 108(12), pp.3814-3854.

- \*\*Farrokhi, F. and Lashkaripour, A., 2023. Can trade policy mitigate climate change? Working Paper.

- Shapiro, J.S., 2021. The environmental bias of trade policy. *The Quarterly Journal of Economics*, 136(2), pp.831-886.

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<sup>1</sup> Order, content, and references subject to change.

## 7. Spatial Integrated Assessment Models

\*\*José-Luis Cruz, Esteban Rossi-Hansberg, The Economic Geography of Global Warming, *The Review of Economic Studies*, 2023, <https://doi.org/10.1093/restud/rdad042>

\*\*Desmet, Klaus, and Esteban Rossi-Hansberg. 2023. "Climate Change Economics over Time and Space" *Prepared for Annual Review of Economics*.

### ● Assessment and Grading System

The course will be graded on a 0-10 scale:

0-4.5	Fail
5-6	C
6.5-7.5	B
8-9	A
9.5-10	A+

Evaluation will be based on in-class participation during the sessions.

### ● Calendar

Sessions:

Topic 1	Tuesday April 2	@20.237
Topic 2	Monday April 3	@20.179
Topic 3	Tuesday April 8	@20.237
Topic 4	Monday April 9	@20.237
Topics 4&5	Tuesday April 15	@20.237
Topic 5	Tuesday April 16	@20.237
Topic 6	Wednesday April 22	@20.237
Topic 6	Monday April 24	@20.179
Topic 7	Tuesday April 29	@20.237
Topic 7	Monday April 30	@20.237