

## Master on Sustainable Development Year 2020 – 2021



UNIVERSITAT DE  
BARCELONA

- **Name:** The Economics of Climate Change
- **Coordinator:** Humberto Llavador (UPF & Barcelona GSE)
- **Language:** English (some sessions may be in Spanish).
- **Schedule:** March 23<sup>rd</sup> – April 27<sup>th</sup>
- **Instructor:** Humberto Llavador
- **Invited Speakers:**, Alejandro Caparrós (Instituto de Políticas y Bienes Públicos, CSIC), Juan Carlos Ciscar (Joint Research Center-Sevilla), Natalia Fabra (U. Carlos III de Madrid), Thomas Stoerk (European Commission and Grantham Research Institute-LSE), Alessandro Tavoni (U. of Bologna), Jordi Teixidó (U. of Barcelona-School of Economics), Jeroen van der Bergh (ICTA-UAB),
- **Credits:** 3 ECTS.

## 1. Summary:

This course uses the elements of economic analysis to study the costs and benefits of climate change, mitigation and adaptation challenges, and the social and distributional aspects associated with climate change.

## 2. Objectives

The objective of the course is to provide a general understanding of the main economic issues related to climate change, offering the instruments to understand current debates and challenges.

## 3. Evaluation:

Students will have to write short essays on each session offered by an external speaker. Grading will be based on the score in those essays and on participation in the class as well as in the different activities and discussions.

## 4. Program:

The course consists of twelve 2-hour sessions. Each session will focus on a specific issue related to the economic aspects of climate change. If necessary, we might change the program to adapt to unforeseen circumstances.

March 23<sup>th</sup>, 16:00-18:00

1. Introduction. What is the economics of climate change? The economics of public goods, common goods and externalities (H. Llavador, UPF-GSE)

Nordhaus (2019); Stavins (2011); Unit 20 at CORE-Team (2020)

March 25<sup>th</sup>, 16:00-18:00

2. Game Theory (an introduction): social interactions and social preferences. (H. Llavador, UPF-GSE)

Dixit et al. (2020), Dixit and Nalebuff (2011)

March 26<sup>th</sup>, 15:00-17:00 (online)

3. Climate change impacts (Juan Carlos Ciscar, JCR-Sevilla)  
Feylen et al (2020)

April 6<sup>th</sup>, 16:00-18:00

4. Aggregating climate change damages across space and time: the social cost of carbon, discounting and sustainability. (H. Llavador, UPF-GSE)  
Llavador et al. (2015)

April 8<sup>th</sup>,16:00-18:00

5. Environmental cooperation (A. Tavoni U. of Bologna)  
Unit 4 at CORE-Team (2020); Tavoni et al (2011); Carattini, S Levin, A  
Tavoni (2019); List (2016)

April 9<sup>th</sup>,15:00-17:00 (online)

6. Energy transition and climate change (N. Fabra, U. Carlos III)  
Fabra (2020)

April 13<sup>th</sup>,16:00-18:00

7. Global carbon pricing (J. van der Bergh, ICTA-UAB)  
van der Bergh *et al.* (2020); Baranzini *et al.* (2017)

April 15<sup>th</sup>,16:00-18:00

8. Inequality and climate change (J. Teixidó, UB-School of Economics)  
Bel et al. (2020); Jacob et al. (2020); Roy et al. (2018)

April 16<sup>th</sup>,15:00-17:00 (online)

9. Climate Negotiations and Environmental Agreements (A. Caparrós,  
IPP-CSIC)

April 20<sup>th</sup>,16:00-18:00

10. Uncertainty and tipping points in the economics of climate change.  
(T. Stoerk, EC-GRI/LSE)  
Nordhaus (2019a); Lenton et al. (2008)

April 22<sup>nd</sup>,16:00-18:00

11. Emissions Markets: The EU Emissions Trading System (EU ETS) (T.  
Stoerk, EC-GRI/LSE)  
PMR&ICAP (2016); Sterner (2020)

April 27<sup>th</sup>,15:00-17:00

12. Conclusions (H. Llavador, UPF-GSE)

## 5. References:

- Baranzini, A., J. C.J.M. van den Bergh, S. Carattini, R. B. Howarth, E. Padilla, J. Roca. 2017. "Carbon Pricing in Climate Policy: Seven Reasons, Complementary Instruments, and Political Economy Considerations." *Wiley Interdisciplinary Reviews: Climate Change* 8 (4). <https://doi.org/10.1002/wcc.462>.
- Bel, G., and Teixidó, J. J. 2020. The political economy of the Paris Agreement: Income inequality and climate policy. *Journal of Cleaner Production*, 258, 121002. <https://doi.org/https://doi.org/10.1016/j.jclepro.2020.121002>
- Carattini, S Levin, A Tavoni. 2019. "Cooperation in the climate commons." *Review of Environmental Economics and Policy* 13 (2), 227-247
- CORE-Team. 2020. *The Economy*. Available at <https://core-econ.org/the-economy/>
- Dixit, Avinash K, and Bary J Nalebuff. 2010. *The Art of Strategy. A Game Theorist's Guide to Success in Business and Life*. W. W. Norton & Company.
- Dixit, Avinash, K Susan Skeath, and David McAdams. 2020. *Games of Strategy*. 5th ed. W. W. Norton & Company. <https://wnnorton.com/books/Games-of-Strategy/>
- Fabra, N. 2020. "The Energy Transition: a Challenge for Industrial Economics" Forthcoming in *International Journal of Industrial Organization*.

- Feyen, L, J Ciascar, S Gosling, D Ibarreta, A Soria, A Dosio, G Naumann, et al. 2020. *JRC Science for Policy Report JRC PESETA IV Final Report. Publications Office of the European Union*. <https://doi.org/10.2760/171121>.
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- List, J. A., M. K. Price. 2016. “The Use of Field Experiments in Environmental and Resource Economics.” *Review of Environmental Economics and Policy* 10 (2): 206–25. <https://doi.org/10.1093/reep/rew008>.
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- van der Bergh, J. C.J.M., A. Angelsen, A. Baranzini, W. J.W. Botzen, S. Carattini, S. Drews, T. Dunlop, et al. 2020. “A Dual-Track Transition to Global Carbon Pricing.” *Climate Policy* 0 (0): 1–13. <https://doi.org/10.1080/14693062.2020.1797618>.