

Syllabus

[cmcd.economia@fgv.br]

Course Name: Environmental Economics

Faculty:

2024 FIRST SEMESTER

COURSE OUTLINE

This graduate-level course in Environmental Economics aims to provide students with a comprehensive understanding of contemporary issues in the field. Through a multidisciplinary approach, we will explore topics at the intersection of economics and natural sciences, emphasizing the application of diverse methodologies – e.g., IV, difference-in-differences, structural models, integrated assessment models, predictive models -- and data -- e.g., cross-section, panel, geospatial, time series. The course will also foster the development of critical scientific reading (including non-econ journals), comprehension, and presentation skills, culminating in the formulation of an independent research idea.

COURSE PROGRAM

- Deforestation
- Biodiversity
- Global warming
- Forest fires
- Water
- Pollution
- Environmental justice
- Sea level rise
- Artic melting
- Renewables

BIBLIOGRAPHY

Deforestation

- Assunção, J., Gandour, C., & Rocha, R. (2023). DETER-ing Deforestation in the Amazon: Environmental Monitoring and Law Enforcement. *American Economic Journal: Applied Economics*, 15(2), 125-156.
- Hsiao, A. (2021). Coordination and commitment in international climate action: evidence from palm oil. Unpublished, Department of Economics, MIT.
- Bragança, A., & Dahis, R. (2022). Cutting special interests by the roots: Evidence from the Brazilian Amazon. *Journal of Public Economics*, 215, 104753.
- Boulton, C. A., Lenton, T. M., & Boers, N. (2022). Pronounced loss of Amazon rainforest resilience since the early 2000s. *Nature Climate Change*, 12(3), 271-278.
- Verbesselt, J., Umlauf, N., Hirota, M., Holmgren, M., Van Nes, E. H., Herold, M., ... & Scheffer, M. (2016). Remotely sensed resilience of tropical forests. *Nature Climate Change*, 6(11), 1028-1031.

Biodiversity

- Frank, E., & Sudarshan, A. (2023). The Social Costs of Keystone Species Collapse: Evidence From The Decline of Vultures in India. Working paper
- Taylor, C. A. (2021). Cicadian rhythm: Insecticides, infant health and long-term outcomes. Working paper
- Taylor, M. S. (2011). Buffalo hunt: International trade and the virtual extinction of the North American bison. *American Economic Review*, 101(7), 3162-3195.
- Donn L Feir, Rob Gillezeau, Maggie E C Jones, The Slaughter of the Bison and Reversal of Fortunes on the Great Plains, *The Review of Economic Studies*, 2023; rdad060

Global warming

- Nordhaus, W. D. (1992). An optimal transition path for controlling greenhouse gases. *Science*, 258(5086), 1315-1319.
- Schlenker, W., & 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.
- Dietz, S., van der Ploeg, F., Rezai, A., & Venmans, F. (2021). Are economists getting climate dynamics right and does it matter?. *Journal of the Association of Environmental and Resource Economists*, 8(5), 895-921.
- Costinot, A., Donaldson, D., & Smith, C. (2016). Evolving comparative advantage and the impact of climate change in agricultural markets: Evidence from 1.7 million fields around the world. *Journal of Political Economy*, 124(1), 205-248.
- Skidmore, M. E. (2023). Outsourcing the dry season: Cattle ranchers' responses to weather shocks in the Brazilian Amazon. *American Journal of Agricultural Economics*, 105(2), 409-433.
- 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.

Forest Fires

- Balboni, C., Burgess, R., & Olken, B. A. (2021). The origins and control of forest fires in the tropics. Working paper
- Burke, M., Childs, M. L., de la Cuesta, B., Qiu, M., Li, J., Gould, C. F., ... & Wara, M. (2023). The contribution of wildfire to PM2. 5 trends in the USA. *Nature*, 1-6.

Water markets

- Rafey, W. (2023). Droughts, deluges, and (river) diversions: Valuing market-based water reallocation. *American Economic Review*, 113(2), 430-471.

Pollution

- Dias, M., Rocha, R., & Soares, R. R. (2023). Down the River: Glyphosate Use in Agriculture and Birth Outcomes of Surrounding Populations. *Review of Economic Studies*, rdad011.
- Calzada, J., Gisbert, M., & Moscoso, B. (2023). The hidden cost of bananas: The effects of pesticides on newborns' health. *Journal of the Association of Environmental and Resource Economists*, 10(6), 1623-1663.
- Currie, J., & Walker, R. (2011). Traffic congestion and infant health: Evidence from E-ZPass. *American Economic Journal: Applied Economics*, 3(1), 65-90.
- Curci, F., & Masera, F. (2023). Flight from Urban Blight: Lead Poisoning, Crime, and Suburbanization. *Review of Economics and Statistics*, 1-45.
- Tanaka, Shinsuke, Kensuke Teshima, and Eric Verhoogen. 2022. "North-South Displacement Effects of Environmental Regulation: The Case of Battery Recycling." *American Economic Review: Insights*, 4 (3): 271-88.

Environmental Justice

- Hernandez-Cortes, D., & Meng, K. C. (2023). Do environmental markets cause environmental injustice? Evidence from California's carbon market. *Journal of Public Economics*, 217, 104786.

Sea level rise

- Chen, J., & Mueller, V. (2018). Coastal climate change, soil salinity and human migration in Bangladesh. *Nature climate change*, 8(11), 981-985.
- Balboni, C. A. (2019). In harm's way? infrastructure investments and the persistence of coastal cities Mimeo, 2021.
- Hsiao, A. (2022). Sea Level Rise and Urban Adaptation in Jakarta. Mimeo, 2022.
- Desmet, Klaus, Robert E. Kopp, Scott A. Kulp, Dávid Krisztián Nagy, Michael Oppenheimer, Esteban Rossi-Hansberg, and Benjamin H. Strauss. 2021. "Evaluating the Economic Cost of Coastal Flooding." *American Economic Journal: Macroeconomics*, 13 (2): 444-86.

Arctic melting

- Diebold, F. X., & Rudebusch, G. D. (2022). Probability assessments of an ice-free Arctic: Comparing statistical and climate model projections. *Journal of Econometrics*, 231(2), 520-534.
- Bekkers, E., Francois, J. F., & Rojas-Romagosa, H. (2018). Melting ice caps and the economic impact of opening the Northern Sea Route. *The Economic Journal*, 128(610), 1095-1127.
- Manshausen, P., Watson-Parris, D., Christensen, M. W., Jalkanen, J. P., & Stier, P. (2022). Invisible ship tracks show large cloud sensitivity to aerosol. *Nature*, 610(7930), 101-106.

Renewables

- Gonzales, L. E., Ito, K., & Reguant, M. (2023). The Investment Effects of Market Integration: Evidence From Renewable Energy Expansion in Chile. *Econometrica*, 91(5), 1659-1693.
- Neidell, M., Uchida, S., & Veronesi, M. (2021). The unintended effects from halting nuclear power production: Evidence from Fukushima Daiichi accident. *Journal of Health Economics*, 79, 102507.
- Novan, Kevin. 2015. "Valuing the Wind: Renewable Energy Policies and Air Pollution Avoided." *American Economic Journal: Economic Policy*, 7 (3): 291-326.
- Cullen, Joseph. 2013. "Measuring the Environmental Benefits of Wind-Generated Electricity." *American Economic Journal: Economic Policy*, 5 (4): 107-33.

GRADING

- 20% - Presentation of one research paper
- 20% - Presentation of a research idea
- 40% - Presentation of research proposal
- 20% - Participation in class

CONTACT