Course syllabus

Environmental Economics - Theory and Applications

Winter 2025/26

Last update: 06.10.2025

Course logistics

This course is part of the MSc International Economics and Economic Policy (MIEEP) at the Department of Economics at Goethe University in Frankfurt am Main. All other students please contact the course teacher prior to enrollment. Credits: 6 CP / 3 SWS.

Teacher: Prof. Dr. Manuel Linsenmeier

Contact: Email linsenmeier@c3s.uni-frankfurt.de with any questions related to the course. Please start the subject line with ENVECON. I will usually respond within 48 hours.

Office hours: By appointment and on Zoom (in person if specifically requested). Usually Wednesdays 2-3 pm. Slots of 20 minutes can be booked here.

Grading: Final written exam of 90 minutes duration.

Time and Location: see LSF

Additional resources: see OLAT

Course description

This course equips students with an economics toolkit to analyze environmental problems and to design environmental policy in an international context. The first half of the course reviews key economic concepts and theories and illustrates their application in environmental economics, including social welfare, market failure, discounting, non-market valuation, property rights, regulation, and uncertainty. The second half introduces several important research topics in environmental economics related to international economics and economic policy: inequality, political economy, development, international trade, and migration. Each week combines theory and empirical evidence, drawing on some of the foundational and the recent literature. The environmental problems covered in the course include air and water pollution, resource use, land degradation, biodiversity loss, and climate change, among others. The classes accompanying the lectures are used for the solution of problem sets and the discussion of selected readings. Problem sets allow students to practice their skills in solving economics problems using mathematics and applied econometrics.

Learning goals

- Students can apply economic theory to understand the causes of environmental problems and to develop and assess policy solutions.
- Students can critically evaluate empirical evidence on the economy and the environment and interpret findings in the economics literature in a larger context.
- Students can effectively communicate to audiences from academia, government, and business how economics can help solve environmental problems.

Course timeline

Weeks with asterisks (*) have a class on Thursday. Problem sets will be published at the end of the lecture in the preceding week, e.g. the problem set for the class on Thursday, 30.10., will be published at the end of the lecture on Tuesday, 21.10.

Week	Date	Topic	Notes
1	14.10.	Introduction	
2	21.10.	Ethics and welfare	
3	28.10.*	Sustainability	
4	04.11.	Valuation	
5	11.11.*	Markets	
6	18.11.	Regulation	
7	25.11.*	Behaviour	
8	02.12.	Uncertainty	
9	09.12.*	Instrument choice	Mock exam published: 15.12.
10	16.12.	Ecological economics	
		Winter break	
11	13.01.*	Inequality	Mock exam due (submission optional): 18.01.
12	20.01.	Political economy	
13	27.01.	Development	
14	03.02.*	Trade	
15	10.02.*	Migration	

Readings

Core readings are marked with an asterisk (*).

All readings can be accessed through the library website except those marked with a plus sign (+). Those readings will be uploaded to OLAT.

<u>Introduction</u>

* Pearce, D. (2002). An Intellectual History of Environmental Economics. Annual Review of Energy and the Environment, 27(1), 57–81.

Ethics and welfare

* Stavins, R. N. (2011). The Problem of the Commons: Still Unsettled after 100 Years. American Economic Review, 101(1), 81–108.

Zaklan, A. (2023). Coase and Cap-and-Trade: Evidence on the Independence Property from the European Carbon Market. American Economic Journal: Economic Policy, 15(2), 526–558.

Sustainability

* Arrow, K. J., Dasgupta, P., Goulder, L. H., Mumford, K. J., & Oleson, K. (2012). Sustainability and the measurement of wealth. Environment and Development Economics, 17(3), 317–353.

Cohen, F., Hepburn, C. J., & Teytelboym, A. (2019). Is Natural Capital Really Substitutable? Annual Review of Environment and Resources, 44(1), 425–448.

Valuation

* Frank, E., & Sudarshan, A. (2024). The Social Costs of Keystone Species Collapse: Evidence from the Decline of Vultures in India. *American Economic Review*, *114*(10), 3007–3040.

+ Wardle, A. R. (2025). The Recreational Value of Rare Species: Causal Evidence from the Cassia Crossbill. Journal of the Association of Environmental and Resource Economists, 12(5), 1133–1164.

+ Pinchbeck, E. W., Roth, S., Szumilo, N., & Vanino, E. (2023). The Price of Indoor Air Pollution: Evidence from Risk Maps and the Housing Market. Journal of the Association of Environmental and Resource Economists, 10(6), 1439–1473.

Carson, R. T., Mitchell, R. C., Kopp, R. J., Presser, S., & Ruud, P. A. (2003). Contingent Valuation and Lost Passive Use: Damages from the Exxon Valdez Oil Spill. Environmental and Resource Economics, 25, 257–286.

Markets

* Andersson, J. J. (2019). Carbon Taxes and CO2 Emissions: Sweden as a Case Study. American Economic Journal: Economic Policy, 11(4), 1–30.

Deryugina, T., Moore, F., & Tol, R. S. J. (2021). Environmental applications of the Coase Theorem. Environmental Science & Policy, 120, 81–88.

Regulation

* Keiser, D. A., & Shapiro, J. S. (2019). Consequences of the Clean Water Act and the Demand for Water Quality. The Quarterly Journal of Economics, 134(1), 349–396.

He, G., Wang, S., & Zhang, B. (2020). Watering Down Environmental Regulation in China. The Quarterly Journal of Economics, 135(4), 2135–2185.

Behaviour

* Homonoff, T. A. (2018). Can Small Incentives Have Large Effects? The Impact of Taxes versus Bonuses on Disposable Bag Use. American Economic Journal: Economic Policy, 10(4), 177–210.

Ferraro, P. J., & Price, M. K. (2013). Using Nonpecuniary Strategies to Influence Behavior: Evidence from a Large-Scale Field Experiment. Review of Economics and Statistics, 95(1), 64–73.

Uncertainty

*+ Heal, G., & Millner, A. (2014). Reflections: Uncertainty and Decision Making in Climate Change Economics. Review of Environmental Economics and Policy, 8(1), 120–137.

Weitzman, M. L. (2014). Fat Tails and the Social Cost of Carbon. American Economic Review: Papers & Proceedings, 104(5), 544–546.

Instrument choice

*+ Goulder, L. H., & Parry, I. W. H. (2008). Instrument Choice in Environmental Policy. Review of Environmental Economics and Policy, 2(2), 152–174.

Ecological economics

* Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., Nykvist, B., de Wit, C. A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P. K., Costanza, R., Svedin, U., … Foley, J. A. (2009). A safe operating space for humanity. *Nature*, *461*(7263), 472–475.

Inequality

* Drupp, M. A., Kornek, U., Meya, J. N., & Sager, L. (2025). The Economics of Inequality and the Environment. Journal of Economic Literature, 63(3), 840–874.

Currie, J., Voorheis, J., & Walker, R. (2023). What Caused Racial Disparities in Particulate Exposure to Fall? New Evidence from the Clean Air Act and Satellite-Based Measures of Air Quality. American Economic Review, 113(1), 71–97.

Political economy

*+ Anderson, S., Marinescu, I., & Shor, B. (2023). Can Pigou at the Polls Stop Us Melting the Poles? Journal of the Association of Environmental and Resource Economists, 10(4), 903–945.

Burgess, R., Hansen, M., Olken, B. A., Potapov, P., & Sieber, S. (2012). The Political Economy of Deforestation in the Tropics. The Quarterly Journal of Economics, 127(4), 1707–1754.

Development

* Greenstone, M., & Jack, B. K. (2015). Envirodevonomics: A Research Agenda for an Emerging Field. Journal of Economic Literature, 53(1), 5–42.

Dinda, S. (2004). Environmental Kuznets Curve Hypothesis: A Survey. Ecological Economics, 49(4), 431–455.

Carleton, T., Jina, A., Delgado, M., Greenstone, M., Houser, T., Hsiang, S., Hultgren, A., Kopp, R. E., McCusker, K. E., Nath, I., Rising, J., Rode, A., Seo, H. K., Viaene, A., Yuan, J., & Zhang, A. T. (2022). Valuing the Global Mortality Consequences of Climate Change Accounting for Adaptation Costs and Benefits. The Quarterly Journal of Economics, 137(4), 2037–2105.

Trade

* Cherniwchan, J. (2017). Trade liberalization and the environment: Evidence from NAFTA and U.S. manufacturing. Journal of International Economics, 105, 130–149.

+ Cohen, M. A., & Tubb, A. (2018). The Impact of Environmental Regulation on Firm and Country Competitiveness: A Meta-analysis of the Porter Hypothesis. Journal of the Association of Environmental and Resource Economists, 5(2), 371–399.

Migration

* Deryugina, T., Kawano, L., & Levitt, S. (2018). The Economic Impact of Hurricane Katrina on Its Victims: Evidence from Individual Tax Returns. American Economic Journal: Applied Economics, 10(2), 202–233.

Bryan, G., Chowdhury, S., & Mobarak, A. M. (2014). Underinvestment in a Profitable Technology: The Case of Seasonal Migration in Bangladesh. Econometrica, 82(5), 1671–1748.