ECON-E0800 – Advanced Environmental Economics
Fall term 2025

Meeting times:	Thurstays (September 4 - October 9) at 16-18
	Wednesdays (October 22 -) at 16-18
Location:	Economicum
Instructors:	Matti Liski (@aalto.fi)
	Lassi Ahlvik (@helsinki.fi)
	Juan Pablo Montero (jmontero@uc.cl)
Teaching assistant:	Akseli Väliviita

Text resources:

- Selected journal articles and book chapters (see reading list below)

Requirements for course approval:

- Homework assignments & Exam (min 50%)

Assessment:

- **Exam** (70%):
  - In-class written exam
- **Problem sets** (pass/fail): "pass"=right to take the exam
  - Problem sets prepare directly for the exam.
- **Reading diaries** (30%):
  - One-page reading diaries based on the reading materials *and* lecture content for readings marked with a star symbol (see the reading list below). To be handed in one week after each lecture ends.

Course outline:

The outline is tentative and may change as the semester progresses.

Date	Location	Day	Topic	Readings	Lecturer
Sep 4	Economicum	Th	Instrument design	A	JPM
Sep 11	Economicum	Th	Instrument design	A	JPM
Sep 18	Economicum	We	*Homework review session*		AV
Sep 25	Economicum	Th	Inequality-aware policies	B	ML
Oct 2	Economicum	Th	Inequality-aware policies	B	ML
Oct 9	Economicum	Th	Social cost of carbon	C	ML
Oct 15	Economicum	We	*Homework review session*		AV
Oct 22	Economicum	Th	Social cost of carbon	C	ML
Oct 29	Economicum	Th	Social cost of carbon	C	ML
Nov 5	Economicum	Th	Climate, trade and carbon leakage	D	LA
Nov 12	Economicum	Th	Climate, trade and carbon leakage	D	LA
Nov 19	Economicum	Th	Climate, trade and carbon leakage	D	LA
Nov 26	Economicum	Th	Climate, trade and carbon leakage	D	LA
Dec 3	Economicum	Th	*Homework review session*		AV
TBA	Economicum	-	Exam		-

Reading list ***(Note: The list will be updated when the course begins)***:
Note: Readings marked with a star ($\star$) are essential and should be used as the primary basis for your learning diary. The remaining readings are included as references to the topics discussed in class and may be consulted to further deepen your understanding of the material.

A Instrument design

- Weitzman, M. L. (1974). Prices vs. Quantities. Review of Economic Studies, 41(4), 477-491
- Fowlie, M., Reguant, M., & Ryan, S. P. (2016). Market-based emissions regulation and industry dynamics. Journal of Political Economy, 124(1), 249-302
- $\star$ Montero, J.P. (2008) A simple auction mechanism for the optimal allocation of the commons. American Economic Review, 98(1), 496-518.
- Cicala, S., et al. (2022). Adverse selection as a policy instrument: unraveling climate change (No. w30283). National Bureau of Economic Research.
- Martimort, D., & Sand-Zantman, W. (2015). A mechanism design approach to climate change agreements. Journal of the European Economic Association, 13(3), 569-606

B Inequality and environmental policy design

- Atkinson, A. and Stiglitz, J. (1976). The design of tax structure: Direct versus indirect taxation. Journal of Public Economics, 1:55â€“75.
- Laroque, G. (2005). Indirect taxation is superfluous under separability and taste homogeneity: a simple proof. Economic Letters, 87:141â€“144.
- Kaplow, L. (2006). On the undesirability of commodity taxation even when income taxation is not optimal. Journal of Public Economics, 90:1235â€“1250.
- Doligaski, P., Dworczak, P., Akbarpour, M. and Kominers, S. D. (2025). Optimal redistribution via income taxation and market design. Working paper.
- $\star$ Pai, M. and Strack, P. (2022). Taxing Externalities Without Hurting the Poor. Tech. rep., Cowles Foundation for Research in Economics, Yale University.
- Ahlvik, Lassi and Liski, Matti and Mäkimattila, Mikael, Pigouvian Income Taxation (2024). CESifo Working Paper No. 11174, Available at SSRN: https://ssrn.com/abstract=4875551 or http://dx.doi.org/10.2139/ssrn.4875551
- Allcott, H., Lockwood, B. B. and Taubinsky, D. (2019). Regressive sin taxes, with an application to the optimal soda tax. The Quarterly Journal of Economics, 134 (3), 1557â€“1626.

- Känzig, D. R. (2023). The Unequal Economic Consequences of Carbon Pricing. Working Paper 31221, National Bureau of Economic Research.
- Pizer, W. A. and Sexton, S. (2020). The distributional impacts of energy taxes. Review of Environmental Economics and Policy.

C Social cost of carbon

- Gerlagh, Reyer and Liski, Matti (2018). Carbon Prices for the Next Hundred Years. The Economic Journal. 128(609), 728-757. https://doi.org/10.1111/ecoj.12436
- ⋆ Golosov, M., Hassler, J., Krusell, P. and Tsyvinski, A. (2014), Optimal Taxes on Fossil Fuel in General Equilibrium. Econometrica, 82: 41-88. https://doi.org/10.3982/ECTA10217
- Bigaart, Inge, Reyer Gerlagh, Matti Liski. A simple formula for the social cost of carbon, Journal of Environmental Economics and Management, Volume 77, May 2016, Pages 75-94.
- Traeger, Christian P.. 2023. "ACE-Analytic Climate Economy." American Economic Journal: Economic Policy, 15 (3): 372-406.
- Liski, Matti, and Francois Salanie. Catastrophes, delays, and learning, TSE WP 2020.

D Climate, trade and carbon leakage

- Hoel, M. (1994). Efficient climate policy in the presence of free riders. Journal of environmental economics and management, 27(3), 259-274.
- ⋆ Harstad, B. (2012). Buy coal! A case for supply-side environmental policy. Journal of Political Economy, 120(1), 77-115.
- Ahlvik, L., Andersen, J. J., Hamang, J. H., & Harding, T. (2022). Quantifying supply-side climate policies. Working paper
- Burgess, R., Hansen, M., Olken, B. A., Potapov, P., & Sieber, S. (2011). The Political Economy of Tropical Deforestation: Evidence from Indonesia.
- Asker, J., Collard-Wexler, A., De Canniere, C., De Loecker, J., & Knittel, C. R. (2024). Two wrongs can sometimes make a right: The environmental benefits of market power in oil, NBER working paper No. w33115
- Harstad, B., & Holtsmark, K. (2024). The gas trap: Outcompeting coal vs. renewables NBER working paper No. w32718

- Acemoglu, D., Aghion, P., Barrage, L., & Hemous, D. (2023). Climate change, directed innovation, and energy transition: The long-run consequences of the shale gas revolution. NBER working paper No. w31657