

## **ECON4910 Environmental Economics**

**Syllabus:**      **Preliminary - This version: 3.3.23**

Time:            Friday 8:15-10, Spring 2023.

Professors:     Mads Greaker (MG), Bård Harstad (BH), Max Wosnitza (MW)

Seminars:      Seminar 1: Fridays 10:15-12; Seminar 2: Wednesdays 12:15-14.

Courseweb      [www.uio.no/studier/emner/sv/oekonomi/ECON4910/v23](http://www.uio.no/studier/emner/sv/oekonomi/ECON4910/v23)

**Content:** The course will cover the fundamental problems and methods in environmental economics: Market failures, the Coase theorem, policy instruments, pollution permit trading, cost-benefit analyses, trade and the environment, international environmental problems, international agreements, climate change, deforestation, discounting, and integrated assessment models.

**Readings:** By “Ch” we refer to chapters in the main text book: Phaneuf, D. J og Requate, T: *A Course in Environmental Economics: Theory, Policy, and Practice*, 2016. ISBN: 9780521178693.

Lecture notes, slides, and articles will be used in addition (see below).

**1, Jan. 20: Welfare theorems, externalities, Pigou taxes (MG)**

Ch 1, 2, and 3, and Sandmo (1975).

**2, Jan 27: Policy Instruments: Coase Theorem (MG)**

Ch 4, and Coase (1960).

**3, Feb. 3: Tradable permits and prices vs. quantities (MG)**

Ch 8, Montgomery (1972), Schmalensee (2013), Weitzman (1974).

**4, Feb. 10: International Environmental Problems: Free riding vs Participation (BH)**

Lecture notes.

**PS1, Feb. 10: Seminar (MG)**

**5, Feb. 17: International Environmental Problems: Dynamic games (BH)**

Lecture notes.

**PS2, Feb. 17: Seminar (MG)**

**6, March 3: Compliance and Repeated Games (BH)**

Ch 12, and lecture notes.

**PS3, March 3: Seminar (MW).**

**7, March 10: Supply-side vs. Demand-side Environmental Policy (BH)**

Key: Hoel (1994). Supplements: Golombek, Hagem, and Hoel (1995), Harstad (2012).

**8, March 17: Deforestation and conservation (BH)**

Lecture notes.

**PS4, March 17: Seminar (MW).**

**9, March 24: The value of the future: Discounting (BH)**

Ch 21, Weitzman (1998), Karp (2005), lecture notes, and the slides available at [semesterpage](#).

**10, March 31: Guest lecture – Norway's chief climate agreement negotiator**

**11, April 14: Innovation and technology adoption +TBA (MG)**

**PS5, April 14: Seminar (MW).**

**12, April 21: Innovation and technology adoption +TBA (MG)**

**13, April 28: Innovation and technology adoption +TBA (MG)**

Ch 11, Acemoglu et al. (2012).

**PS6, April 28: Seminar (MG).**

**Articles [to be updated]**

Note: Main syllabus is the lectures, the lecture notes (which will be posted before the classes) and the seminars. The articles and the books are meant as support.

Acemoglu, D., P. Aghion, L. Bursztyn, and D. Hemous (2012): "The Environment and Directed Technical Change," *American Economic Review* 102(1): 131-66

Barrett, S. (1994): "Self-enforcing international environmental agreements," *Oxford Economic Papers* 46: 878-94.

Barrett, S. (2005): "The theory of international environmental agreements," in Maler, K. G. and Vincent, J., (eds.), *Handbook of Environmental Economics*. Burlington: Elsevier Science, ISBN: 9786610633760

Battaglini, M., and B. Harstad (2016): "Participation and Duration of Environmental Agreements," *Journal of Political Economy* 124(1): 160-204.

Coase, R. H. (1960): "The problem of social cost," *The Journal of Law & Economics* 56(4): 837-877.

Dutta, Prajit K. and R. Radner (2009): "A Strategic Analysis of Global Warming: Theory and Some Numbers," *Journal of Economic Behavior & Organization* 71(2): 187-209.

Finus, M., and S. Maus (2008): "Modesty May Pay!" *Journal of Public Economic Theory* 10:801–26.

Golombek, R., Hagem, C., and Hoel, M. (1995): "Efficient incomplete international climate agreements," *Resource and Energy Economics* 17(1): 25-46.

Greaker M. and D. Popp (2022): "Environmental economics, regulation and innovation," NBER working paper 30415: <https://www.nber.org/papers/w30415>.

Harstad, B. (2016): "The Dynamics of Climate Agreements," *Journal of the European Economic Association* 14(3): 719-52.

Harstad, B. (2012): "Buy coal! A case for supply-side environmental policy," *Journal of Political Economy*, 120(1): 77-115.

Harstad, B., F. Lancia, and A. Russo (2022): "Prices vs. Quantities for Self-Enforcing Agreements," *Journal of Environmental Economics and Management* 111 (January).

Harstad, B. and T. Mideksa (2017): "Conservation Contracts and Political Regimes," *Review of Economic Studies* 84(4): 1708-34.

Hoel, M.(1994): "Efficient Climate Policy in the Presence of Free Riders," *J. Environmental Econ. and Management* 27 (3): 259–74.

Karp, L. (2005): "Global warming and hyperbolic discounting," *Journal of Public Economics* 89(2): 261-282.

- Montgomery, W. (1972): "Markets in licenses and efficient pollution control programs," *Journal of Economic Theory* 5(3): 395-418.
- Newell, R. G., Pizer, W. A., and Raimi, D. (2013): "Carbon Markets 15 Years after Kyoto: Lessons Learned, New Challenges," *Journal of Economic Perspectives* 27(1): 123-146.
- Oates, W. E. and Schwab, R. M. (1988): "Economic competition among jurisdictions: efficiency enhancing or distortion inducing?" *Journal of Public Economics* 35(3): 333-354.
- Sandmo, A. (1975): "Optimal Taxation in the Presence of Externalities," *The Swedish Journal of Economics*, 77(1): 86-98.
- Schmalensee, R. and Stavins, R. N. (2013): "The SO<sub>2</sub> Allowance Trading System: The Ironic History of a Grand Policy Experiment," *Journal of Economic Perspectives*, 27(1): 103-122.
- Weitzman, M. L. (1974): "Prices vs. quantities," *The Review of Economic Studies* 41(4): 477-491.
- Weitzman, M. L. (1998): "Why the Far-Distant Future Should Be Discounted at Its Lowest Possible Rate," *Journal of Environmental Economics and Management* 36(3): 201-208.