

## ECON4910 Environmental Economics

**Syllabus:** Preliminary - This version: 22.1.20

Time: Mon 8:15-10, Tues 8:15-10, Wednes 12:15-14, and Fridays 14:15-16 (ES Aud. 3)

Professors: Bård Harstad (BH) and Christian Traeger (CT)

Seminars: Thursdays 14:15-16 (ES Aud. 6), G. L. Andreassen: [goril.louise.andreassen@nmbu.no](mailto:goril.louise.andreassen@nmbu.no)

Courseweb [www.uio.no/studier/emner/sv/oekonomi/ECON4910/v20](http://www.uio.no/studier/emner/sv/oekonomi/ECON4910/v20)

**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 and articles will be used in addition (see below).

**1. 22/1: Welfare theorems, externalities, Pigou taxes (BH): 12:15-14**

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

**2. 29/1: Policy Instruments: Coase Theorem (BH): 12:15-14**

Ch 4, and Coase (1960)

**3. 5/2: Tradable permits and prices vs. quantities: 12:15-14**

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

**S1. 6/2 Seminar: Problem Set 1**

**4. 11/2: International Trade and the environment (BH): 8:15-10**

Oates and Schwab (1988)

**5. 26/2: International Environmental Problems: Repeated Games (BH): 12:15-14**

Ch 12, and lecture notes

**S2. 27/2 Seminar: Problem Set 2 (permits, capital competition)**

**6. 4/3: International Environmental Agreements: Dynamic Games (BH): 12:15-14**

Ch 13, and lecture notes

**S3. 5/3 Seminar: Problem Set 3 (compliance)**

**7. 9/3: International Environmental Agreements: Dynamic Games (BH): 8:15-10**

Ch 13, and lecture notes

**S4. 19/3 Seminar: Problem Set 4**

**8. 23/3: International Environmental Agreements: Free riding vs Participation (BH): 8:15-10**

Lecture notes

**9. 25/3: Supply-side vs. Demand-side Environmental Policy (BH): 12:15-14**

Hoel (1994), Golombek, Hagem, and Hoel (1995), Harstad (2012), and perhaps lecture notes

**S5. 26/3 Seminar: Problem Set 5 (discounting)**

**10. 1/4: Deforestation and REDD (BH): 12:15-14**

Lecture notes

**S6. 2/4 Seminar: Problem Set 6**

**11. 15/4: The value of the future: Discounting : 12:15-14**

Ch 21, Weitzman (1998), Karp (2005), and lecture notes.

**S7. 16/4 Seminar: Problem Set 7**

**12. 17/4: Integrated Assessment of Climate Change I (DICE) (CT): 14:15-16**

Nordhaus & Sztorc (2013, [dicemodel.net](http://dicemodel.net)) and Sterner & Persson (2008)

**S8. 23/4 Seminar: Problem Set 8**

**13. 24/4: Integrated Assessment of Climate Change II (CT): 14:15-16**

Lemoine, D. & C. Traeger (2014) and Traeger (2017).

**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.

@ = material found online

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

@ Coase, R. H., *The problem of social cost*, 2016. *The Journal of Law & Economics*, 56(4): 837-877.

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

@ Harstad, B., *Buy coal! A case for supply-side environmental policy*, 2012. *Journal of Political Economy*, 120(1): 7-115.

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

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

@ Lemoine, D. & C. Traeger (2014), *Watch Your Step - Optimal Policy in a Tipping Climate*, *AEJ:Policy* 14 6(1): 137-166.

@ Montgomery, W., *Markets in licenses and efficient pollution control programs*, 1972. *Journal of Economic Theory*, 5(3): 395-418.

@ Newell, R. G., Pizer, W. A., and Raimi, D., *Carbon Markets 15 Years after Kyoto: Lessons Learned, New Challenges*, 2013. *Journal of Economic Perspectives*, 27(1): 123-146.

@ Nordhaus, W. & P. Sztorc (2013), DICE 2013R: Introduction and User's Manual, Website: [dice-model.net](http://dice-model.net).

@ Oates, W. E. and Schwab, R. M., *Economic competition among jurisdictions: efficiency enhancing or distortion inducing?*, 1988. *Journal of Public Economics*, 35(3): 333-354.

@ Sandmo, A. *Optimal Taxation in the Presence of Externalities*, 1975. *The Swedish Journal of Economics*, 77(1): 86-98.

@ Schmalensee, R. and Stavins, R. N., *The SO2 Allowance Trading System: The Ironic History of a Grand Policy Experiment*, 2013. *Journal of Economic Perspectives*, 27(1): @ 103-122.

@ Sterner, T. & M. Persson (2008), An Even Sterner Review - Introducing Relative Prices into the Discounting Debate, *Review of Environmental Economics and Policy* 2:61-76.

@ Traeger (2017), Analytic Integrated Assessment (with Temperature and Uncertainty). Website.

@ Weitzman, M. L., *Prices vs. quantities*, 1974. *The Review of Economic Studies*, 41(4): 477-491.

@ Weitzman, M. L., *Why the Far-Distant Future Should Be Discounted at Its Lowest Possible Rate*, 1998. *Journal of Environmental Economics and Management*, 36(3): 201-208.