

ECON4910 Environmental Economics

Syllabus: Preliminary - This version: 8.3.22

Time: Monday 10:15-12

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

Seminars: Seminar 1: Fridays 8:15-104; Seminar 2: Wednesdays 8:15-10.

Courseweb www.uio.no/studier/emner/sv/oekonomi/ECON4910/v22

Present Problem sets: To make the class more lively and give you an opportunity to be active and develop your presentation skills, I encourage you to form pairs, before you select one of the problems that you present for the rest of us in the small seminar group. If you don't have a team partner, please email bardh@uio.no so that I can help you to form a team partner. Be quick in emailing me the topic/seminar date which you prefer: First come, first serve.

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. 17/1: Welfare theorems, externalities, Pigou taxes (BH)

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

2. 24/1: Policy Instruments: Coase Theorem (BH)

Ch 4, and Coase (1960)

3. 31/1: Tradable permits and prices vs. quantities

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

PS1 (2/2 and 4/2). Seminar: Externalities, public goods, and the Coase theorem

4. 7/2: International Environmental Problems: Repeated Games (BH)

Ch 12, and lecture notes

PS2 (9/2 and 11/2). Seminar: Tradable permits, prices vs. quantities, and self-enforcing agreements.

5. 14/2: International Environmental Agreements: Dynamic Games (BH)

Ch 13, and lecture notes

6. 28/2: International Environmental Agreements: Free riding vs Participation (BH)

Lecture notes

PS3 (2/3 and 4/3). Seminar: International environmental agreements

7. 7/3: Supply-side vs. Demand-side Environmental Policy (BH)

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

PS4 (Wednesday-group meets 14/3 instead of 9/3. Friday-group meets 11/3): Seminar

PS5 (16/3 and 18/3). Seminar

9. 17/3: The value of the future: Discounting

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

10. 21/3: Guest lecture – Norway's chief climate agreement negotiator

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

11. 4/4: Guest lecture – Innovation and technology adoption by Till Requate

Ch 11.

12. 21/4: Integrated Assessment of Climate Change I (DICE) (CT)

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

PS6 (25/4) Joint seminar by Traeger on Integrated Assessment of Climate Change I (DICE) (CT)

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

13. 28/4: Integrated Assessment of Climate Change II (CT)

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

2/5: Deforestation (BH)

Lecture notes

PS7 (4/5 and 6/5) Seminar: TBA.

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. Satorc (2013), DICE 2013R: Introduction and User's Manual, Website: 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.