



31C01300/31E01310

Energy & Environmental Economics

Mo 10-12, Wed 10-12, U3 / U141, Otakaari 1

Prof Matti Liski

Teaching assistant: TBA

Email: matti.liski@aalto.fi

Email: TBA

Website: <http://hse-econ.fi/liski/>

Office Location: Economicum, Arkadiankatu 7, 2. floor

Office Hours: by appointment

+358-40- 3538173

This version of the Syllabus: March 26, 2018

Course Description: This class has the objective of developing understanding of the basic problems in environmental, resource and energy economics. Tools will be developed for analyzing market failures and policy instruments for solving them. Detailed topics include: common pool resource use theory; pollution markets; consumer behavior and energy; electricity markets; description and analysis of resource and energy commodity markets. Main empirical cases include: emissions trading; Energy Paradox; pricing, emissions and investments in the electricity sector.

Prerequisite(s): Principles of Economics, or similar.

Textbooks:

Environmental economics and policy, Jonathan A. Lesser, Daniel E. Dodds, Richard O. Zerbe, Jr. (1997).

Natural resource and environmental economics, Perman, Ma, Common, Maddison, McGilvray, (2011, 4 th edition).

Textbooks are Supporting material, not mandatory.

Additional material

- supporting notes for the lectures
- readings for the lectures
- supporting material cited in the lecture notes

Grade structure

Reading assignments	pass/fail (3 passes mandatory)
Problem sets	pass/fail (2 passes mandatory)
Case study	50%
Final exam	50%

Course structure by topics (detailed breakdown and schedule below)

1. Externalities
 - a sources
 - b distortions: static, dynamic
 - c empirical measurements
2. Policy solutions
 - a Bargaining solutions
 - b Regulation: prices vs. quantities
 - c Unilateral policies
3. Pollution markets
 - a Global experience
 - b EU emissions trading scheme
4. Consumer behavior
 - a Energy Paradox
 - b Emissions and vehicle choice
 - c Consumers, housing, and emissions
5. Electricity markets
 - a Market design
 - b Investments: nuclear and renewable energy
 - c Energy transition
6. Energy commodity markets
 - a Exhaustible resources
 - b Green Paradox
7. Climate change policies
 - a The global policy design problem

Course Policies:

- **General**

- No email correspondence regarding reading assignments and problem sets: they should be uploaded to the course webpage

- **Reading Assignments**

- about one reading assignment per week (5 readings in total)
- There is a check-sheet for each reading, with questions on the reading
- Return the reading following the directions on the webpage (see the schedule)
- Readings support the cases and stimulate discussions
- **3 returned (and passed) readings mandatory**

- **Problem sets**

- Good to work independently on these
- The problem sets prepare you for the exam
- **Two returned (and passed) problem set is mandatory**

- **Case study**

- 8-12 pages report on a policy case
- group work OK (max 2 persons)
- Case lectures provide material for the choice of a topic; several case topics provided during the course
- 50 % of the final grade

- **Exam**

- Material: lectures (textbook is supporting material but not mandatory)
- 50 % of the final grade
- all credits from readings and problem sets are valid in the retake. The date for the retake is open but it will in August/September 2018.

Detailed Course Breakdown:

The weekly coverage might change as it depends on the progress of the class.

Lecture	Content
Lecture April 9	<ul style="list-style-type: none">• Introduction• Topic: Externalities• Material: lecture notes on externalities (available on the webpage), textbook (Lesser et al.) chapters 6-10
Lecture April 11	<ul style="list-style-type: none">• Topic: Policy solutions• Voluntary reading assignment: Measuring externalities (Chen et al, 2013)
Lecture April 16	<ul style="list-style-type: none">• Instrument design• Prices vs. quantities
Lecture April 18	<ul style="list-style-type: none">• Pollution trading• Reading assignment: EU-ETS (Martin et al, 2013)
Lecture April 23	<ul style="list-style-type: none">• Topic: Consumer behavior• Energy technology choices by households• Reading assignment: Voluntary supporting readings in dropbox
Lecture April 25	<ul style="list-style-type: none">• Topic: Emissions-based vehicle taxation• The Finnish car tax reform• Reading assignment: Busse et al. and Stitzing
Lecture May 30	VAPPU!
Lecture May 2	<ul style="list-style-type: none">• Topic: Electricity markets• Case: The Nordic electricity market• Reading assignment: von der Fehr and Harbord
Lecture May 7	<ul style="list-style-type: none">• Topic: Renewable energy support schemes• Case: Nuclear power investments and renewable power• Reading assignment: Fridolfsson and Tangerås
Lecture May 9	<ul style="list-style-type: none">• Topic: Investments in electricity markets• Case: Nuclear power• Readings: voluntary in dropbox
Lecture May 14	<ul style="list-style-type: none">• Topic: Exhaustible resources• Case: The market for oil and other scarce resources• Reading assignment: Hamilton
Lecture May 16	<ul style="list-style-type: none">• Topic: Climate policies• Reading assignment: TBA
Problem set 1	<ul style="list-style-type: none">• April 19: Return April 28
Problem set 2	<ul style="list-style-type: none">• May 11: Return date May 18
Exam	<ul style="list-style-type: none">• May 23
Case study	<ul style="list-style-type: none">• Return by May 30