



31C01300

Energy & Environmental Economics

Mo 12-14, Wed 9-11, U3 / U141, Otakaari 1

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This version of the Syllabus: April 17, 2016

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 (31A00110 or 31A00210), 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

lecture notes

readings for the lectures

supporting material cited in the lecture notes

Grade structure:

Reading assignments	pass/fail (3 passes mandatory)
Problem sets	pass/fail (1 pass 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**

- All email correspondence regarding reading assignments and problem sets: James Corbishley

- **Reading Assignments**

- One reading assignment per week (5-6 readings in total)
- There is a check-sheet for each reading, with 2-3 questions on the reading
- Return the check-sheet in person in the class where the reading is discussed (see the schedule)
- Readings support the cases and stimulate discussions
- Teamwork supported (2-3 persons) but all members of the team must be ready to discuss the reading in the class
- **3 returned (and passed) readings mandatory**

- **Problem sets**

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

- **Case study**

- 5-10 pages report on a policy case
- 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

Detailed Course Breakdown:

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

Lecture	Content
Lecture April 11	<ul style="list-style-type: none">• Introduction• Topic: Externalities• Material: lectures, textbook (Lesser et al.) chapters 6-10
Lecture April 13	<ul style="list-style-type: none">• Topic: Policy solutions• Reading assignment: Measuring externalities
Lecture April 18	<ul style="list-style-type: none">• Instrument design• Prices vs. quantities• Reading assignment: EU-ETS
Lecture April 20	<ul style="list-style-type: none">• Pollution trading• Reading assignment: global experience
Lecture April 25	<ul style="list-style-type: none">• Topic: Consumer behavior• Case: Energy technology choices by households• Reading assignment: Energy Paradox
Lecture April 27	<ul style="list-style-type: none">• Topic: Emissions-based vehicle taxation• Case: The Finnish car tax reform• Reading assignment: Car tax reform
Lecture May 2	<ul style="list-style-type: none">• Topic: Electricity markets• Case: The Nordic electricity market• Reading: TBA
Lecture May 4	<ul style="list-style-type: none">• Topic: Investments in electricity markets• Case: Nuclear power investments and renewable power• Reading: TBA
Lecture May 9	<ul style="list-style-type: none">• Topic: Exhaustible resources• Case: The market for oil• Reading assignment: understanding the oil market
Lecture May 11	<ul style="list-style-type: none">• Topic: Green Paradox• Reading assignment: TBA
Lecture May 16	<ul style="list-style-type: none">• Topic: Climate policy I• Reading assignment: TBA
Lecture May 18	<ul style="list-style-type: none">• Topic: Climate policy II• Reading assignment: TBA
Problem set 1	<ul style="list-style-type: none">• April 20: Return April 27
Problem set 2	<ul style="list-style-type: none">• May 11: Return date May 16
Case study	<ul style="list-style-type: none">• Return by May 30