MARKETS AND THE ENVIRONMENT

Lecture in the BSc program in Economics
Course language: English
Prerequisites: Microeconomics A and B, Principles of Econometrics
Examination: Written final exam, 90 min
ECTS-Credits: 7

Instructor:	Prof. Ulrich Wagner
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Office hours:	Thu, 2 p.m. – 3 p.m.
Office location:	Room 211 in the economics building (L 7, 3-5)
Assistant:	N.N.

Class dates:	Monday, 10:15 a.m. – 11:45 a.m., S 031	Lecture
	Wednesday, 10:15 p.m. – 11:45 p.m., S 031	Tutorial

Syllabus

Course description:

This course introduces advanced undergraduate students in economics to the field of environmental and natural resource economics. It presents the theory of optimal management of renewable and non-renewable resources and introduces the students to different forms of environmental regulation, giving particular regard to market based instruments such as tradeable pollution rights. Different concepts for the valuation of non-market amenities such as environmental quality are presented, including hedonic pricing, travel cost methods and contingent valuation. Their use is exemplified with an introduction to environmental cost-benefit analysis. Finally, the course touches on issues associated with the regulation of transboundary pollution.

Competences and skills that will be acquired and learning results:

Knowledge skills
- capacity to understand and analyze problems in environmental economics
- capacity to evaluate the environmental consequences of economic activity

Learning activities and methodology

Students will acquire the knowledge and technical skills set out above by following the lectures, by solving problems that will be corrected jointly in class, and by attending tutorials in which problems are solved at the black board. Likewise, part of the skills will be acquired by the students through individual research.

The educational activities are aimed at enabling the students to use the tools of economic analysis acquired in previous classes and to apply them to the regulation of environmental problems. The teaching method is interactive and based on the use of computer software (spreadsheet and econometric applications) for the analysis of case studies related to environmental protection and to natural resources management.

Evaluation of the student will be based primarily on the grade obtained in a final exam. Extra credit is given to students who turn in voluntary homework.

Textbooks

- [K] Kolstad, Charles: Intermediate Environmental Economics. Oxford University Press. International 2nd Edition.
- [T] Tietenberg, Tom: Environmental and Natural Resource Economics. Addison Wesley. *Any edition will do, chapter numbers below refer to the sixth edition.*
- [P] Perman, Roger, Yue Ma, Michael Common, David Maddison, James McGilvray: Natural Resource and Environmental Economics. Addison Wesley. 4th edition.

Course Program and Readings

N.B. Additional readings are marked with an asterisk (*).

1. Introduction

[K] Ch. 1, 4, 5, 20.I

*Solow, R. (1992). Sustainability: An Economist's Perspective. *National Geographic Research and Exploration*, 8: 10-21.

2. Natural Resource Management

2.1. Non-renewable resources

[T] Ch. 5, 7, 8 & 9

Livernois, J. (2009). On the Empirical Significance of the Hotelling Rule. *Review of Environmental Economics and Policy*, 3(1): 22-41.

*Maugeri, L. (2009). Understanding Oil Price Behavior through an Analysis of a Crisis. *Review of Environmental Economics and Policy,* 3(2):147-166.

2.2. Renewable resources

[T] Ch. 12 and 13

Olmstead, S. (2010). The Economics of Managing Scarce Water Resources. *Review of Environmental Economics and Policy*, 4(2): 179-198.

3. Instruments for correcting market failures

[K] Ch. 11, 12, 13 &16

Goulder, L. and I. Parry (2008). Instrument choice in Environmental Policy. *Review of Environmental Economics and Policy*, 2(2): 152-174.

4. Valuing the environment

[K] chapters 8-10

Portney, P.R. (1994). The Contingent Valuation Debate: Why Economists Should Care. *Journal of Economic Perspectives*, 8: 3-17.

5. International Aspects

[K] Ch. 19, [P] Ch. 9 and 10

Barrett, S. (2003). Environment and Statecraft. Oxford University Press. Oxford, UK. Chapters 3.1-3.9, 3.14, 3.20

(over)

Weekly planning

WEEK	DATE	DESCRIPTION	LECTURES	TUTORIAL
1	13.2.	Introduction to environmental economics, growth and sustainability Organization of the class	X	
1	15.2	*No class*		X
2	20.2.	Non-renewable resources: Hotelling's model	X	
2	22.2.	Problem sheet 1: Micro review Problem sheet 2: Hotelling's model		X
3	27.2.	Non-renewable resources: monopoly and recycling	X	
3	1.3.	Problem Sheet 3: Hotelling, monopoly and recycling		X
4	6.3.	Renewable resources: concept and growth, static model, free entry *Homework 1 is due in class*	X	
4	8.3.	Problem Sheet 4: Renewable resources. Solution of Homework 1		X
5	13.3.	Renewable resources: dynamic model; forests; species extinction, pollution and other externalities, fishery policy	X	
5	15.3.	Pollution regulation: Pigouvian taxes and subsidies		X
6	20.3.	Computer-based case study: optimum level of a renewable resource. *Computer class room 158 in L7, 3-5*		X
6	22.3.	Problem sheet 6: Pollution regulation	X	
7	27.3.	Pollution regulation: quotas, comparison taxes vs. quotas *Homework 2 is due in class*	X	
7	29.3	Solution of Homework 2		X
8	3.4.	Emissions trading game *Played online in computer class room 158 in L7, 3-5*		X
8	5.4.	Review emissions trading game		X
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9	24.4.	Pollution regulation: Coase theorem, tradable emission permits	X	
9	26.4.	Pollution regulation: Kyoto Protocol, European Emissions Trading Scheme	X	
10	1.5.	*No class (Tag der Arbeit)*		
10	3.5.	Valuation: revealed preferences, hedonic pricing, travel cost method	X	
11	8.5.	Valuation: stated preferences, contingent valuation *Homework 3 is due in class*	X	
11	10.5.	Solution of Homework 3		X
12	15.5.	Computer-based case study: hedonic pricing *Computer class room 158 in L7, 3-5*		X
12	17.5.	Problem sheet 7: Contingent valuation		X
13	22.5.	International aspects of environmental regulation	X	
13	24.5.	Problem Sheet 8: International aspects of environmental regulation		X
14	29.5.	Multilateral environmental agreements *Homework 4 is due in class*	X	
14	31.5.	Solution to Homework 4; Q&A		X