ENV-610

Ecological economics

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Cursus	Sem.	Type
Civil & Environmental Engineering		Opt.

Language of teaching	English
Credits	2
Session	
Exam	Written
Workload	60h
Hours	**29**
Lecture	24
Exercises	3
Practical work	2
Number of positions	**15**

Frequency

Every 2 years

Remark

Next time: Spring 2025, Min. 5 participants

Summary

This course is an introduction to economic theory applied to environmental issues. It presents the methods used to assess environmental impacts and natural resources as well as environmental regulation instruments. It then broadens the analysis to ecological economics.

Content

- Introduction to ecological economics: The economy as a sub-system of the global environment: entropy, carrying capacity, environmental services, ecological crises, natural capital, sustainability
- Introduction to market economics: willingness to pay, preferences, marginalism, demand, supply, markets, prices, elasticities, non-market goods, externalities
- Markets with external costs: correcting non-efficient production level with all a variety of environmental policy instruments
- Optimal abatement level, optimal allocation of abatement, policy instruments
- Assessing environmental goods and external costs
- Discounting future impacts under uncertainty
- External cost abatement: environmental policy instruments, example of the US Clean Air Act
- How to think of ecological economics, foundations, and implications

Decoupling, IPAT and Kaya, green growth or degrowth, sufficiency and quality of life

Keywords

Economic analysis, environmental protection, climate policy, externalities, environmental regulation, cost-benefit analysis, ecological economics

Learning Prerequisites

Required courses

Introductory economics is useful but not required

Important concepts to start the course

Market supply, demand and equilibrium

Learning Outcomes

By the end of the course, the student must be able to:

- Explain how a benevolent social planner would set environmental protection goals
- Explain how environmental protection goals are set by real authorities
- Discuss different solutions to render economic activites (production, consumption) more sustainable
- Solve little problems related to optimal management of the environment

Teaching methods

Ex cathedra lectures with strong participant interaction expected

Expected student activities

Participate actively in class

Assessment methods

Written exam (small problems and short essays) one week after the end of the lectures

Resources

Bibliography

Tietenberg, T. H. and L. Lewis (2018). Environmental and Natural Resource Economics, 11th Edition. Routledge
Supporting material (slides, short readings) will be provided on the Moodle page of the course

Ressources en bibliothèque

- Environmental and Natural Resource Economics / Tietenberg
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Moodle Link

- https://go.epfl.ch/ENV-610

Videos

- https://tube.switch.ch/channels/iG7jI3Qh2k (Spring 2022)