



Universidad
de Navarra

Environmental Economics_20

Guía docente 2023-24

PRESENTATION

Course: Environmental Economics

ECTS: 3

Language: English

Type: Optional (Economics)

Módulo y materia de la asignatura: Bilingual Economics: Modulo 7. Optativas / Materia 7.2
Optativas Específicas

Year/Semester: Third Year, Second Semester

Professor: Susana Ferreira Martínez (sferreir@uga.edu)

Schedule and Location: In-person lectures + Remote (Zoom) lectures

Online lectures (1 hour each):

Via Zoom all at 14:00

- February 6
- February 8
- February 13
- February 15
- February 20
- February 22
- February 27
- March 13
- March 20
- April 3
- April 10
- April 17
- April 24

In-person lectures (3 hours each):

- Friday March 1: 12:00-15:00, Aula M1 Amigos
- Monday March 4: 12:00-15:00, Aula 7 Facultades Eclesiásticas
- Tuesday March 5: 14:30-17:30, Aula M6 Amigos
- Wednesday March 6: 15:30-17:30, Aula M1 Amigos
- Thursday March 7: 14:30-17:30, Aula M1 Amigos
- Friday March 8: 12:00-15:00, Aula M1 Amigos

Office: 4070 Amigos

IMPORTANT: The use of laptops, mobile phones and similar devices is NOT ALLOWED during in-person classes



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Course description:

Environmental Economics is the application of the principles of economics to the study of how scarce environmental resources are allocated by individuals and society. It focuses primarily on the role of incentives to manage the natural environment, and on how to design economic mechanisms to bring into balance environmental impacts and the needs of ecosystems, with human desires. The goal of this course is to familiarize students with the role that economics can play in understanding and tackling contemporary environmental challenges. Broad concepts considered include externalities, market failure, public goods, determining desirable levels of pollution control and sustainability. We will emphasize the scope for policy intervention and the design of appropriate policy instruments for different environmental challenges.

LEARNING OUTCOMES AND COMPETENCES

The goal of this course is to familiarize students with the role that economics can play in understanding and tackling contemporary environmental challenges. Broad concepts considered include externalities, market failure, public goods, determining desirable levels of pollution control and sustainability. We will emphasize the scope for policy intervention and the design of appropriate policy instruments for different environmental challenges.

Course objectives

By the conclusion of this course, you are expected to be able to:

- Explain how economic activity depends upon and affects the natural environment.
- Explain under which conditions markets are efficient and identify instances of "market failure" as they relate to the use of natural resources.
- Determine the efficient level of pollution in an economic framework.
- Identify and classify available public policy approaches to improve environmental quality.
- Compare environmental policy instruments (taxes, tradable permits, standards, voluntary action) according to the following evaluation criteria: efficiency, cost-effectiveness, equity, incentives for long-run improvement, political/public acceptability.
- Apply economic analysis to understand the complexity of climate change
- Explain the pros and cons of different environmental policy instruments to mitigate climate change.

Specific competencies

SSOP 6: Learn the mathematical, statistical language and IT tools needed to start research in economics

SSOP 7: Understand microeconomic strategies and incentives and their impact on natural resource and environmental management

SSOP 9: Understand the macroeconomic variables that regulate the economy and how they interact with natural resource and environmental management

SSOP 10: Understand the societal role of economics and the environment

PROGRAM



Below is a tentative list of topics and required readings. Deviations from this outline may be required. Additional readings may be provided. Please stay tuned.

1. Introduction to Environmental Economics: The Economy and the Environment

Field and Field – chapters #1-2

Perman et al. – chapter #2

2. Economic efficiency and market failure: Externalities, Public Goods and the Commons

Field & Field – chapter #4

Fullerton, D. & R. Stavins (1998) "How Economists See the Environment" *Nature* 395(6701): 433-4

Hardin, G. (1968) "The Tragedy of the Commons." *Science*, 162 (Dec. 13):1243-1248.

Parry, I. (2002) "Is Gasoline Undertaxed in the United States?" *Resources*, 2002, 148, RFF.

Greenstone, M., Kopits, E., & Wolverton, A. (2013) "Developing a social cost of carbon for US regulatory analysis: A methodology and interpretation" *Review of Environmental Economics and Policy*, 7(1), 23-46.

3. Modelling pollution control

(Introducing marginal abatement cost and marginal damage functions to calculate costs and benefits of pollution control, and to find efficient levels of pollution control)

Field & Field – chapter #5

4. Criteria for evaluating environmental policies

Field & Field – chapter #9

5. Environmental policies I: Decentralized policies, Command and Control Strategies and Market-based Instruments

Field & Field – chapters #10-13

Coase, R. (1960), "The Problem of Social Cost," *Journal of Law and Economics*, 1-44

Engel, S, S. Pagiola and S. Wunder (2008) "Designing payments for environmental services in theory and practice: An overview of the issues" *Ecological Economics* 65(4):63-74.



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FAO case study (2013) "The Vittel Case: A public-private partnership in the mineral water industry" <http://www.fao.org/3/a-bl927e.pdf>

Portney, P. (2008) "The (Not So) New Corporate Social Responsibility: An Empirical Perspective" *Journal of Economic Perspectives*, 2008, Issue 2(2): 261–275

6. Climate change

Parry, I. and W. Pizer "Emissions Trading versus CO₂ Taxes" RFF backgrounder

The Economists' voice - Several issues (www.bepress.com/ev):

Barret, S. "Proposal for a New Climate Change Treaty System" Nordhaus, W. "Carbon Taxes to Move Toward Fiscal Sustainability"

Klenert, D., L. Mattauch, E. Combet, O. Edenhofer, C. Hepburn, R. Rafaty and N. Stern (2018) "Making Carbon Pricing Work for Citizens" *Nature Climate Change* 8: 669-77.

Climate Leadership Council "The Conservative Case for Carbon Dividends" (2017)

(Topics 7 and 8 will be covered if time allows it)

7. Benefit Cost Analysis

8. Expanding the measurement of economic and social progress: Sustainability and Quality of Life.

LEARNING ACTIVITIES

In-person lectures (x6) that will introduce the modules in the course and the six individual assignments.

Class attendance and participation is expected and encouraged (as in part of your grade depends on it).

Remote lectures via Zoom (x12).

Final exam.

GRADING

CONVOCATORIA ORDINARIA

Your final grade will be on a 100-point scale split as follows:



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- Six individual assignments (60 points)
- Class attendance and participation (15 points)
- Final exam (25 points)

Under Spanish standards, a PASS in this class is obtained if you obtain 50 points.

CONVOCATORIA EXTRAORDINARIA

Final exam: 25 points of the grade, the other 75 points are based on the course individual assignments (60) and class attendance and participation (15).

OFFICE HOURSE

Office hours: 4070 Amigos at times announced in class.

Email: sferreiram@external.unav.es o sferreir@uga.edu.

BIBLIOGRAFÍA

Required materials

- Main textbook: Field, Barry C. and Martha K. Field, *Environmental Economics: An Introduction*, 7th Edition. McGraw-Hill Irwin: New York. [Find it in the Library](#)
- Academic articles as announced during class.
 - Hardin, G. (1968) "The Tragedy of the Commons." *Science*, 162 (Dec. 13):1243-1248.
 - Parry, I. (2002) "Is Gasoline Undertaxed in the United States?" *Resources*, 2002, 148, RFF.\
 - Greenstone, M., Kopits, E., & Wolverton, A. (2013) "[Developing a social cost of carbon for US regulatory analysis: A methodology and interpretation](#)" *Review of Environmental Economics and Policy*, 7(1), 23-46.\
 - Coase, R. (1960), "The Problem of Social Cost," *Journal of Law and Economics*, 1-44
 - Engel, S, S. Pagiola and S. Wunder (2008) "[Designing payments for environmental services in theory and practice: An overview of the issues](#)" *Ecological Economics* 65(4):63-74.
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 - Parry, I. and W. Pizer "Emissions Trading versus CO2 Taxes" RFF backgrounder
 - The Economists' voice (2007) Several issues (www.bepress.com/ev); Stiglitz, J. "A New Agenda for Global Warming"; Barret, S. "Proposal for a New Climate Change Treaty System"; Nordhaus, W. "Carbon Taxes to Move Toward Fiscal Sustainability"
 - Klenert, D., L. Mattauch, E. Combet, O. Edenhofer, C. Hepburn, R. Rafaty and N. Stern (2018) "Making Carbon Pricing Work for Citizens" *Nature Climate Change* 8: 669-77.



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- Climate Leadership Council "The Conservative Case for Carbon Dividends" (2017)

Suggested materials

- Another (more advanced) text, not required but recommended: [Perman, R., Y. Ma, M. Common, D. Maddison and J. McGilvray \(2011\): *Natural Resources & Environmental Economics* 4th ed. Pearson Education, London.](#)
- [The Economics of Biodiversity: The Dasgupta Review](#) (2021)
- Encyclical Letter [*Laudato Si'*](#) of the Holy Father Francis on Care for our Common Home