

**COURSE DATA****Data Subject**

Code	36133
Name	Environmental economics
Cycle	Grade
ECTS Credits	6.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
1316 - Degree in Economics	Faculty of Economics	4	First term

Subject-matter

Degree	Subject-matter	Character
1316 - Degree in Economics	18 - Pathway: economic analysis	Optional

Coordination

Name	Department
RUBIO JORGE, SANTIAGO JOSE	10 - Economic Analysis

SUMMARY

Water, air, and land pollution are examples of environmental problems that are relevant for our course. They also foreshadow many of the features that we will focus on in studying the economic approach to environmental problems. Perhaps most importantly, the examples demonstrate the role of context in framing the problem. Populations affected by pollution of a common medium can differ in their income levels, how they interact with the resource, and the ways in which pollution affects their well-being. For economic policy analysis it is therefore necessary to examine the institutions, preferences, characteristics, and baseline environmental conditions that are relevant for the economic agents bearing the costs and enjoying the benefits of a proposed action. Related to this, the previous examples demonstrate the large variability in spatial scale of different environmental problems. For problems like climate change, the spatial scale may be the entire planet, and the impacted agents the world population. For local or regional problems, such as conventional air pollution, outcomes might reasonably be different across different populations. All these issues will be addressed in this Environmental Economics course.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

The student should have approved Microeconomics I and II as well as first-grade mathematics. It is also advisable to have passed the Game Theory and Strategic Behavior subject.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1316 - Degree in Economics

- Show critical thinking skills.
- Have decision-making skills and be able to apply knowledge to practice.
- Be able to learn autonomously.
- Apply the principles of economic analysis (rational decision) to the diagnosis and resolution of problems.
- Understand and apply the scientific method, which involves formulating hypotheses, deducing verifiable results and contrasting them with empirical and experimental evidence.
- Understand the keys to the functioning of market economy, the difference between normative and positive reasoning and between the concepts of equity and efficiency.
- Understand the effects of different market structures on efficiency and equity and the influence of regulatory policies.
- Know and understand the main market failures (public goods and externalities), their private and public solutions and their influence on the environment and natural resources.
- Understand the effects of the existence of private information in relation to quality and productivity on the functioning and performance of markets and enterprises, as well as their possible private and public solutions.
- Recognise strategic conflicts and know how to use basic strategic principles to obtain cooperation and coordination in incentive problems.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

Determine the key variables that give rise to market failures, in particular, the externalities.

Characterize market allocations and other economic outcomes with externalities.



Know the pros and cons of the different environmental policy instruments.

Understand the problems associated with international negotiations on transnational environmental problems and design mechanisms to solve these problems.

DESCRIPTION OF CONTENTS

1. Externalities

- 1.1 Relationship between economics and environment
- 1.2 Perfectly competitive markets
- 1.3 The efficiency of a competitive market
- 1.4 Market failures: externalities
- 1.5 A polluting competitive industry

[K] Chapter 1 and Section 4.III

[PR] Sections 8.1-8.6, 9.1, 9.2 and 18.1

2. Taxes, standards and subsidies

- 2.1 Taxes versus standards: uncertainty
- 2.2 Taxes versus standards: cost efficiency
- 2.3 Taxes versus subsidies: long-run effects
- 2.4 Taxes versus subsidies: imperfect competition

[K] Sections 12.I-12.IV and 15.II

[PR] Sections 8.7, 8.8 and 18.2

3. Pollution permits markets

- 3.1 A simple model of pollution with two firms
- 3.2 Coase theorem
- 3.3 Pollution permits: cost efficiency
- 3.4 Pollution permits markets with a dominant firm

[K] Chapter 13

[PR] Section 18.4

**4. International environmental problems**

- 4.1 Non-cooperative emission control policies
- 4.2 International environmental agreements without colateral payoffs
- 4.3 International environmental agreements with colateral payoffs
- 4.4 Binding agreements and participation

[K] Section 19.III.C-D

[PR] Section 18.6

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Classroom practices	30,00	100
Development of individual work	35,00	0
Study and independent work	55,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

The course is organized into theoretical and practical classes. During the course, the student will have to solve practical exercises of the problem sets. The subject materials (class notes and problem quizzes) will be available in the virtual classroom. In the practical classes, the teacher will invite the students to participate in the resolution of the exercises.

EVALUATION

The grade of the first call will correspond to 20% with the grade obtained from the resolution of the practical exercises, 30% with the note of the midterm exam and 50% with the final exam. All these continuous assessment activities are recoverable. The delivery of practical exercises is not prerequisite to attending the exams. The midterm exam will not be eliminatory so the final exam will cover the theoretical and practical contents of the whole subject. The type of questions in both exams will be selected so that the total score of different questions reflects the attendance activities corresponding to the workload specified in this guide.

As all continuous evaluation activities are recoverable, the grade of the second call will correspond 100% with the grade obtained from the completion of a written exam. The exam will cover the contents of the theoretical and practical classes, and the type of questions will be selected so that the total score of different questions corresponds to the volume of work devoted to the theory classes and classroom practices.



REFERENCES

Basic

- Kolstad, Charles D. (2010). Environmental Economics, 2nd edition, Oxford University Press [K]
- Para aquellos estudiantes que no tengan conocimiento de inglés se recomienda el siguiente texto:

Riera, Pere, Dolores García, Beng Kriström y Runar Brännlund (2016). Manual de Economía Ambiental y de los Recursos Naturales, 3ª ed., Paraninfo.
- Como libro de apoyo se utilizará en algunos capítulos el siguiente texto de microeconomía:

Pindyck, Robert S. y Daniel L. Rubinfeld (2018). Microeconomía. 9ª ed., Pearson/Prentice Hall [PR]

Additional

- Azqueta, D. (2007). Introducción a la Economía Ambiental, 2ª ed., McGrawHill.
- Endres, A. (2011). Environmental Economics. Theory and Policy. Cambridge University Press.
- Hanley, Nick, Jason Shogren y Ben White (2019). Introduction to Environmental Economics, 3rd ed., Oxford University Press.
- Labandeira, X., C.J. León y M.J. Vázquez (2007). Economía Ambiental. Pearson/Prentice Hall.
- Phaneuf, D.J. y T. Requate (2017). A Course in Environmental Economics. Cambridge University Press.
- Romero, C. (2007). Economía de los Recursos Ambientales y Naturales. 2ª ed. ampliada, Alianza Editorial.
- Tietenberg, Thomas H. y L. Lewis (2018). Environmental & Natural Resource Economics. 11ª ed., Routledge.
- Kolstad, Charles (2011). Intermediate Environmental Economics, International Edition, 2nd ed., Oxford University Press.
- Karp, Larry (2017). Natural Resources as Capital, MIT Press