

Introduction to Environmental Economics

Code: 106754
ECTS Credits: 6

Degree	Type	Year	Semester
2504604 Environmental Sciences	FB	1	2

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Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Teachers

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Prerequisites

There are no prerequisites.

Objectives and Contextualisation

Contextualization

The subject Introduction to Environmental Economics (IEA) belongs to subject 7 "Environmental Economics" of the Degree in Environmental Sciences given by the Faculty of Sciences. This subject is taught by professors from the Faculty of Economics and Business.

IEA contributes in an essential way to the training and learning process of the 1st Course because it introduces concepts and tools of the economy that prove to be basic to better understand the relationship between human and natural systems. In particular, it delves into the environmental economic policy instruments that we have at our disposal to manage the different resources and services offered by the Earth system.

In addition, it contributes to the professional training of students since it encourages learning in a series of skills, among which stand out: critically evaluating the economic impact of one's own activity, working autonomously in the approach of economic problems practices in the environmental field, identify the main foundations of the economy that intervene in environmental processes, recognize the interrelationship between the economy, natural resources and public sectors, or express yourself using the language appropriate to the

information of fundamental and environmental economics, in a clear, explanatory and synthetic way, which will be of great use to future professionals in the analysis, conservation and management of the environment and natural resources.

Training objectives

The objective of the subject is twofold, on the one hand to understand the basic concepts of the economy that should allow us, on the other hand, to understand human systems as systems open to the input of energy and materials, and to the waste output. Understand the mechanisms and tools that can be used from economics for a more efficient management of natural resources.

At the end of the course the student will have a clearer idea of:

- i) The basic concepts of economics and their use in environmental sciences;
- ii) The basic literature of the methods and concepts presented;
- iii) The relationship between the economic process of human systems and the earth system, as well as the different approaches used to analyze this interaction

Learning Outcomes

- CM15 (Competence) Critically assess the economic impact of your own activity.
- CM16 (Competence) Act based on ethical responsibility and respect for fundamental rights and duties, diversity and democratic values when undertaking environmental projects.
- CM16 (Competence) Act based on ethical responsibility and respect for fundamental rights and duties, diversity and democratic values when undertaking environmental projects.
- CM17 (Competence) Work independently when tackling economic problems in the environmental field.
- KM24 (Knowledge) Identify the main principles of economics involved in environmental processes.
- KM25 (Knowledge) Identify the basic elements of microeconomics and macroeconomics.
- KM26 (Knowledge) Recognise the definition of economic science and the economic process, as well as how markets function.
- KM27 (Knowledge) Recognise the relationship between the economy, natural resources and public sectors.
- SM22 (Skill) Incorporate the natural, social and economic aspects that characterise environmental issues.
- SM23 (Skill) Extract relevant economic information from reports, plans, projects, programmes and articles in the environmental field.
- SM24 (Skill) Express yourself using language appropriate to fundamental and environmental economics, clearly, explicitly and briefly.

Content

FIRST PART

1. The economic system and the environment. Economics and ecological economics: conceptual and methodological aspects.

Basic Reading:

- Krugman, Wells y Olney - *¿Qué es la economía? Acciones habituales de la vida diaria. Principios básicos.*
- Common y Stagl - *Introducción a la economía ecológica.*

2. Markets and prices: supply and demand.

Basic Reading:

- Krugman, Wells y Olney - *Oferta y demanda. El mercado contraataca.*
- Common y Stagl - *Intercambio y mercados.*
- Blanco - *La Demanda, la Oferta y el Mercado.*

3. Production and costs.

Basic Reading:

- Krugman, Wells y Olney - *El productor. Qué hay detrás de la curva de oferta: factores productivos y costes. Competencia perfecta y la curva de oferta.*
- Blanco - *La empresa: Producción. Costes y beneficios.*

4. Market structures: competitive markets and non-competitive markets.

Basic Reading:

- Krugman, Wells y Olney - *Mercados y eficiencia. Estructura de mercado: más allá de la competencia perfecta. Monopolio. Oligopolio. Competencia monopolística y diferenciación de producto.*
- Blanco - *La Empresa en el Mercado de competencia perfecta. Los mercados no competitivos: Monopolio, competencia monopolista y oligopolio.*

5. Fundamentals of public sector intervention.

Basic Reading:

- Common y Stagl - *Límites a los mercados.*

6. Macroeconomics: the economic system from an aggregate perspective.

Basic Reading:

- Common y Stagl - *Crecimiento económico y medio ambiente.*
- Krugman, Wells y Olney - *Introducción a la macroeconomía. Macroeconomía: una visión global. Fluctuaciones económicas a corto plazo. La oferta y la demanda agregadas. La política fiscal. Los impuestos y el multiplicador. El dinero, los Bancos Centrales y la política monetaria.*
- Krugman, Wells y Olney - *evaluar la macroeconomía.*
- Comon y Stagl - *Contabilidad económica.*

SECOND PART

1. Instruments of environmental economic policy

1. Externalities
2. Optimum level of contamination
3. Internalization of externalities
4. Pigou and green taxes
5. Coase and markets of tradable emission permits
6. Payment for environmental services

Basic Reading: Martínez Alier y Roca Págs. 128-227.

Complementary Readings: Martínez y Kosoy 2007; Puig y Freire 2007; Romero 1997: 29-50.

2. Monetary valuation and the environment

1. Ecological value and economic value
2. Families of economic valuation methods
3. Total economic value
4. Discount rate

Basic Reading: Martínez Alier y Roca Págs. 228-319.

Complementary Readings: Agüero et al. 2005; Romero 1997: 51-76.

3. Decision support tools

1. Economic and political democracy
2. The compensation criterion of Kaldor-Hicks
3. Risk, uncertainty and irreversibility
4. Cost - Benefit Analysis
5. Complexity, Post-Normal science and substantive rationality
6. Multi-Criteria analysis

Basic Reading: Martínez Alier y Roca Págs. 228-319; Munda 2004

Complementary Readings: Munda 1996; Riera 1992; Riera y Macian 1999; Falconí y Burbano 2004; Martí et al., 2000.

4. Analysis of renewable and non-renewable resources

1. Property rights and their relationship with resource management. Hardin's Tragedy of the Commons.
2. Resource base and reserves
3. Hubbert's curve
4. Hotelling's rule: optimal path of resource extraction
5. The criteria of El Serafy
6. EROI or energy rate of return on energy investment
7. Nuclear energy, waste, time and discount
8. Sustainable yield. Biological vs. Economic Models
9. Economics of fisheries

Basic Reading: Martínez Alier y Roca Págs. 106-114, 370-447.

Complementary Readings: Aguilera 1992; GRAIN 2014; Romero 1997: 77-159; Espinoza et al., 2019.

Methodology

1. Master lesson

The teacher will carry out an analytical conceptualization and an updated synthesis of each of the study topics shown in the didactic units. The aim of this activity is to facilitate the transmission of knowledge and motivation for the analysis of the relationship between human activity and the environment, which are focused in order to promote active and cooperative learning.

2. Practical sessions

They are structured in three types of activities: 1) exercise and examples of scientific writing; 2) research, interpretation and analysis of economic variables and their relationship with the environment; and 3) presentation of the results of group work. With these activities, students will not only consolidate the knowledge learned in lectures, but they will learn to do individual and group research, to analyze information, synthesize it, defend it and discuss it.

3. Tutorials

The process of learning and acquiring skills will be supervised by the teacher through individual and/or group tutorials. The teacher of the subject will be available to the students to resolve their doubts and follow the progress of the aforementioned learning process and the acquisition of students' skills.

4. Virtual Campus of the subject

In face-to-face teaching, the Virtual Campus is a useful tool, so that students have a complementary space where they can access different types of materials that the teacher considers essential to progress in the learning process of the subject. To access it, you just have to go to the UAB website and there you will find the link (<http://www.uab.es/interactiva/default.htm>), or directly to the campus website virtual (<https://cv2008.uab.cat/>).

Note: 15 minutes of a class will be set aside, within the calendar established by the center/degree, for students to fill in the teacher performance and subject evaluation surveys /module.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes	32	1.28	KM24, KM25, KM26, KM27, SM22, KM24
Seminars part 1	4.5	0.18	CM15, CM16, CM17, SM22, SM23, SM24, CM15
Seminars part 2	4.5	0.18	CM15, CM16, CM17, SM22, SM23, SM24, CM15
Type: Supervised			
Tutorials	0.9	0.04	CM15, KM24, KM25, KM26, KM27, SM22, CM15
Type: Autonomous			
Reading and studying theory	37.1	1.48	CM15, CM17, KM24, KM25, KM26, KM27, SM22, CM15
Research	20	0.8	SM23, SM23
Seminars' preparation	29	1.16	CM15, CM16, SM22, SM23, SM24, CM15

Assessment

CONTINUOUS EVALUATION

The evaluation of the course will be based on the continuous evaluation of the process of acquiring knowledge and skills by the students.

The evaluation of the first part is as follows:

- A group essay (up to 5 members) on a topic related to environmental economics, which includes an oral presentation, which will score 25% on the final grade of the first part.
- A partial knowledge exam that can combine test-type and thematic questions and that will count for 75% of the grade.

The evaluation of the second part is as follows:

- A group essay (up to 5 members), maximum of 2,000 words, on cases of environmental conflicts to be published on ejatlas.org, which will count for 25% of the grade. The report will follow the structure of the cases that are published in [ejatlas](http://ejatlas.org) and will include presentation and discussion in the last practical class.
- A partial knowledge exam that can combine test-type and thematic questions and that will count for 75% of the grade.

In order to proceed with the weighted average of all the activities evaluated, it is essential that students obtain at least a grade of 3 in each of the tests.

SINGLE EVALUATION

Students who have taken advantage of the single evaluation modality must take a final test that will consist of a theory exam in which they must develop a topic and answer a series of short questions. Next, you must take a practical test in which you must solve a series of exercises similar to those that have been worked on in the Classroom Practice sessions. In addition, on the day of the exam, you must submit a written work on a topic related to environmental economics, of a maximum of 3,000 words.

The student's grade will be the weighted average of the three previous activities, in which the theory exam will account for 40% of the mark, the practice exam 35% and the written work 25%.

RETAKE EXAM

If students fail the subject, be it the continuous or the single evaluation, they have another opportunity to pass the subject through the retake exam that will be held on the date set by the coordination of the degree. In this test it will be possible to recover 75% of the mark corresponding to the theory and practices for each of the two parts. Written assignments or final reports will not be recoverable. If a minimum grade of 3 is achieved, this grade will be averaged with the grade obtained in the written essay and final report.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam 1	37,5%	2	0.08	CM15, KM24, KM25, KM26, KM27, SM22, SM24
Exam 2	37,5%	2	0.08	CM15, KM24, KM25, KM26, KM27, SM22, SM24
Group essay 1	12,5%	9	0.36	CM15, CM16, CM17, KM24, KM25, KM26, KM27, SM22, SM23, SM24
Group essay 2	12,5%	9	0.36	CM15, CM16, CM17, KM24, KM25, KM26, KM27, SM22, SM23, SM24

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Software

There are no prerequisites.