COURSE DATA

DATA SUBJECT

Code: 33090
Name: Economics and the environment
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1104 - Degree in Environmental Sciences	Facultat de Ciències Biològiques	3	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1104 - Degree in Environmental Sciences	Economics and the environment	COMPULSORY

COORDINATION

SAZ SALAZAR SALVADOR DEL

SUMMARY

Once the environmental quality and sustainable use of resources became a priority from the point of view of politics (in the late 1960s), the society has been seeking the appropriate tools for the protection of the environment. Traditionally, the majority of the industrialized countries have applied the so-called direct regulatory instruments, such as standards, prohibitions, permissions and sanctions. In general, these instruments have failed in the attainment of the environmental challenges and have led high costs for the society as a whole in their aim of achieving a high degree of environmental protection.

The market system and economic instruments have been introduced in the environmental policy as a way of applying the "polluter pays principle". Despite the complexity to implement them, it is considered that they may contribute to improve the effectiveness and efficiency of environmental policies at least as follows:

They contribute to reduce the economic costs of achieving a certain level of environmental protection as they provide to pollutants greater flexibility to meet the requirements of pollution reduction, or allow for environmental improvements without increasing the associated economic costs.

Economic instruments can stimulate the innovation in technologies for prevention and pollution control because for economic agents, they are an economic incentive since the prevention of the generation of

pollution means to pay less taxes.

Some economic instruments (such as taxes and fees) increase revenues that may be used for different purposes.

Despite their limitations in measuring the costs and benefits of environmental policies aimed to protect the environment, the economic approaches are gaining interest and popularity in the policy context. An example is the new role of the economic analysis in the water planning proposed by the Water Framework Directive.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

1104 - Degree in Environmental Sciences

Capacidad de análisis de los problemas medioambientales desde una perspectiva económica.

Capacidad de valoración del medio ambiente y de la calidad ambiental.

DESCRIPTION OF CONTENTS

1. The economy: concept and fundamental problems.

2. Economy and environment

2.1. The circular economy: the interaction between economy and environment.
2.2.
2.3. The sustainable economy: weak and strong environmental sustainability.
2.4. The environmental problems and their classification

3. The economics of pollution I.

3.1. External effects.
3.2. The direct regulation: environmental standards.
3.3. The indirect regulation or economic instruments: environmental taxes, tradable permits and subsidies.
3.4. The practice of environmental policy: measures to prevent climate change
3.5

4. The economics of pollution II

4.1. The optimal level of pollution.
4.2. The achievement of optimal pollution through the market.
4.3. Taxation and optimal pollution.
4.4

5. Valuation methods of the environment quality I: Indirect methods.

5.1. The hedonic price method.
5.2. The travel cost method.
5.3. The replacement costs method.

6. Valuation methods of the environment quality II: Direct methods.

6.1. The contingent valuation method.
6.2.
6.3.
6.4. Valuation, results transfer and compensation.
6.5. Valuation and cost-benefit analysis.

7. The discount of the future.

7.1. The problem of the discount.
7.2. The discounting of the future from an individual perspective.
7.3. The discounting of the future from a social perspective.

8. Development and environment

8.1.
8.2. The dual economy, inequality, poverty and environmental degradation.
8.3. Economic growth and environment
8.4. International trade and environment.

9. Non-renewable resources.

9.1. Natural resources.
9.2 The demand and supply of non-renewable resources.
9.3 The price of a non-renewable resource: the rule of Hotelling.

10. Renewable resources

10.1. The problem of renewable resources.
10.2. The management of a fishery.
10.3. The management of forests.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	3,00
Theory	45,00
Classroom practices	12,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	10,00
Independent study and work	0,00
Preparation of lessons	50,00
Preparation for assessment activities	30,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

The methodology used is based on:

1. Delivery of lectures. Each unit will be developed by oral presentations supported by synthesis schemes, slides, computer projections and diverse documentary material. The classes will be interactive with students, discussing with them the aspects that are more difficult or especially interesting of each unit.

2. Delivery of practical sessions. Practical aspects appropriate to the theoretical content will be addressed, seeking their validity when carrying out the activities and the subsequent application in the future to real situations.

3. Conducting academic activities. These activities will include work either individually or in groups. They will provide support both in the assimilation of concepts and theoretical approaches and in practical since they include the development of analytical products, final comments and book review of documentary sources, reports, action plans, etc.

Students will have sufficiently early precise indications on the material needed to perform different activities proposed and the sequencing of the same. Wherever possible, this information will be available in the virtual learning platform of the university.

4. The tutorials will be on-site during the time of delivery of classes. They may be virtual of the end of the classes.

Students must prepare the topics in depth, so they develop their intellectual background and their research capacity. The practices will be aimed at solving problem and decision-making.

Complementary, a series of specific seminars to address in depth some of the issues raised in the program will be carry out. Students must make a report / summary of the contents covered in the seminar.

EVALUATION

The methodology of the course is designed to encourage critical thinking and active participation of the group. The evaluation will be carried out continuously, and the final grade will take into account that continuous assessment (the student's active participation in classes and individual work), and the grade obtain in an objective test as a final exam.

In the works that will be delivered along the course, the graphic expression, the methodology used, the adequacy of the sources, the coherence between the different phases and the synthetic capacity and effort in seeking information and the ability to acquire new knowledge and concepts will be evaluated.

The final exam represents a maximum of 80% of the final grade taking overcome with 5 to count the other part and pass the course.

REFERENCES

- Mankiw, N.G. (2017): Principios de Economía, Cernage Learning, 7ª edición.
- Azqueta, D. (2007): Introducción a la economía ambiental, McGraw-Hill, 2º edición.
- Labandeira, X., León, C.J. y Vázquez, M.X. (2007), Economía Ambiental, Pearson, Prentice Hall, Madrid.

- Pierce, D.W. y Turner, R.K. (1995), Economía de los recursos naturales y del medio ambiente, Colegio de Economistas de Madrid, Celeste Ediciones.

- Riera, P., Brannlund, R., García, D. y Kriström, B. (2016), Manual de Economía Ambiental y de los Recursos Naturales, Paraninfo, Madrid.

- Tietenberg, T., L e w i s , L . (2018), Environmental and Natural Resource Economics, 11th edition, Routledge.