

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

Code	33090
Name	Economics and the environment
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1104 - Degree in Environmental Sciences	Faculty of Biological Sciences	3	First term

Subject-matter

Degree	Subject-matter	Character
1104 - Degree in Environmental Sciences	139 - Economics and the environment	Obligatory

Coordination

Name	Department
SAZ SALAZAR, SALVADOR DEL	132 - Economic Structure

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

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.

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

SKILLS:

- Knowledge of the importance of the environment and its relationship with the economy.
- Ability to reflect on the need to achieve sustainable development and the influence of socio-economic variables.
- Knowledge of the major environmental problems and our responsibility in searching practical solutions.
- Acquisition of the basic foundations for the economic valuation of goods with non-market valuation
- Recognition of the usefulness of economic instruments to correct environmental problems and as a commitment to sustainable development.



SOCIAL SKILLS:

- Acquisition of social awareness of environmental issues.
- Ability to work in multidisciplinary teams. Cooperation and discussion group problem.
- Ability to organize and plan studies on the environment.
- Ability to argue from rational criteria distinguishing clearly what is subject opinion of what are facts or accepted scientific evidence.
- Ability to acquire and use scientific vocabulary to express with rigor the own ideas of the field of environmental economics.
- Ability to make decisions, ability to develop and express judgments independently about problems of the environment.
- Skills to communicate with technicians from related fields. Ability to communicate ideas.
- Interest in scientific dissemination and the impact of science on culture and consciousness of society.
- Ability to work in an international context and to communicate with experts from other fields.
- Research, planning and directing skills.
- Ability to analyze information from different sources.
- Skills to work both independently and in an interdisciplinary team.
- Initiative and entrepreneurial spirit.
- Problem solving and decision making.
- Ability to promote critical thinking developing the capacity to analyze specific events, with the tools learned and to reason rigorously and systematically. Ability to argue and express themselves coherent and intelligible, both to write a comprehensive and organized text as to present the results of a particular analysis.

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

ACTIVITY	Hours	% To be attended
Theory classes	45,00	100
Classroom practices	12,00	100
Tutorials	3,00	100
Development of individual work	10,00	0
Preparation of evaluation activities	30,00	0
Preparing lectures	30,00	0
Preparation of practical classes and problem	20,00	0
TOTAL	150,00	

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

Basic

- Mankiw, N.G. (2017): Principios de Economía, Cernage Learning, 7ª edición.
- Azqueta, D. (2007): Introducción a la economía ambiental, McGraw-Hill, 2º edición.

Additional

- 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.



ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

Contenidos

Se mantienen los contenidos que figuran en la guía docente de la asignatura.

Metodología docente

La situación excepcional creada por la Covid-19 implica la adaptación de la docencia a un sistema híbrido o mixto, en el que, en general, la docencia de las clases teóricas será en formato online en aquellos grupos en los que, por su tamaño, no se pueda garantizar el cumplimiento de las recomendaciones sanitarias, mientras que las clases prácticas, en general, se desarrollarán de manera presencial.

La docencia online se apoyará en todos los instrumentos disponibles, como videoconferencias síncronas y asíncronas, transparencias con locución, subida de material al Aula Virtual, etc.

No obstante, si se produce un cambio de las condiciones sanitarias que obligue a modificar el modelo docente, se informará de las adaptaciones que sea necesario realizar.

Evaluación

El sistema de evaluación se modifica y el único cambio que se propone en esta asignatura es la forma de evaluación de la parte teórica de la misma que consistirá en (1) un examen tipo test a elegir una única respuesta correcta entre cuatro alternativas posibles, descontando la mal contestadas un 20%, y (2) dos preguntas de desarrollo a elegir entre tres posibles. El tipo test ponderará un 50% de la nota y las dos preguntas de desarrollo el 50% restante. Se siguen manteniendo las ponderaciones originales entre evaluación continua y examen final.

No obstante, cabe precisar que esta modalidad de examen puede cambiar, dependiendo de la evolución de la pandemia del Covid-19 y de las indicaciones de las autoridades competentes, en cuyo caso, se informará al alumnado de la modalidad de examen.



Bibliografía

Se mantiene la bibliografía recomendada en la guía docente.

