



INTRODUCTION

This course shall analyse and discuss some of the main questions and problems which result from the intersection between the satisfaction of human needs and the environment, as well as the tools and solutions which are proposed for the resolution of environmental problems from the perspective of the economy and business.

The syllabus begins with a historical analysis of the relationship between economics and the environment, with the description of certain basic notions of technical economic concepts which are necessary for the comprehension of the course material and the application of economic tools. Thereafter, the main technical developments and advances shall be analysed by way of progressive subject matters.

- **Degree:** Environmental Sciences, Environmental Sciences & Biology.
- **Module in the degree program:** V, Business Management and Administration.
- **ECTS:** 3 ECTS credits.
- **Year and semester:** First year, first semester.
- **Type of course:** Mandatory course.
- **Professor:** Dr. D. Kepa Solaun.
- **Language:** English.
- **Lecture schedule:** Fridays from 12:00 to 2:00 pm.
- **Lecture theater:** Classroom 15 (Science Library Building).

COMPETENCES

- **CG1** Manage learning.
- **CG2** Think in an integrated manner and approach problems from different perspectives.
- **CG3** Critical thinking.
- **CG4** Team work.
- **CG5** Foster awareness and respect for the environment and the ecosystems.
- **CG6** Information management.
- **CG7** Communicate in writing and verbally regarding environmental issues, with an adequate style and proper linguistic approach for the situation and audience.
- **CE10** Manage basic environmental legislation.
- **CE11** Understand social and political environmental processes.
- **CE29** Economically value environmental services and resources.

PROGRAM



The aim of the program is to extract the main concepts and methods of Environmental Economics. Given the diversity of existing approaches, the subjects and methods shall be explained as developments of the main paradigms of Environmental Economics.

In order to understand the syllabus and the proposals, it shall be necessary to have certain basic notions of economics and business management which shall be progressively explained.

I. Economics and the environment. A brief introduction.

- Introduction.
- Economics, money and the physical world. A historical approach.
- The limits to growth.
- Main paradigms in environmental economics.

II. Fundamental economic concepts.

- The science of scarcity.
- Economic methods and thinking.
- Microeconomics.
- Macroeconomics.
- Econometrics.

III. Environmental decision-making.

- Introduction.
- The pollution trade-off.
- Methodologies for environmental decision-making:
 - (1) The Cost-Benefit analysis.
 - (2) The Multicriteria analysis.
 - (3) The Cost-Effectiveness analysis.

IV. Environmental valuation.

- Introduction.
- The Total Economic Value and its components.
- Valuation methods:
 - (1) Replacement cost.
 - (2) Effect on production.
 - (3) Travel cost models.



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(4) Hedonic pricing method.

(5) Contingent valuation.

(6) Choice modelling.

- Benefit transfer and meta-analysis.

V. Economics and Environmental policy.

- Introduction.

- Public tools for environmental protection:

(1) Regulation.

(2) Taxes.

(3) Emissions trading systems.

(4) Voluntary agreements.

- General conditions to formulate environmental policies.

VI. Climate change economics.

- Introduction.

- Climate science and background.

- Economics of climate mitigation.

- Economics of climate adaptation.

- Climate finance.

VII. Natural resource economics.

- Introduction.

- Sustainable development and resources.

- Game theory, property rights and resource management.

- Applied natural resource economics:

(1) Non-renewable resources.

(2) Renewable resources.

EDUCATIONAL ACTIVITIES

1.- Personal work of the student.

Students will have at their disposal a set of materials for each unit of the syllabus, after which a self-assessment activity will be carried out.

2.- Lectures.



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In these classes the most relevant aspects of the program shall be explained and discussed. At the end of each individual subject, the presentation shall be uploaded to ADI (Virtual Interactive Platform).

The teaching methodology of the subjects shall be based upon:

- Stimulate the creativity of students for the development of solutions by themselves and to discuss the materials without preconceived responses, so as to improve their critical and creative skills and in order to understand and retain essential concepts.
- Case studies. For each of the subjects, at least one case study shall be explained, by way of the participation and discussion of students, role plays or specific tasks. The objective thereof is to provide a practical understanding of the problems and tools, as well as to stimulate the capacity of students to provide realistic and effective responses to environmental problems.
- A historical description and analysis of each one of the questions or areas raised, so that the students are able to understand how the main concepts were developed and the problems which resulted therefrom. This general study shall be combined with the definition and exposition of the most relevant concepts and the analysis of specific situations.

3.- Project (small groups).

Students must develop a group project, under the instructions and methodology that will be provided, in which the teachings of the subject will be put into practice.

4.- Environment & Landscape Program.

This subject is part of the E&LP. A full day visit has been scheduled so that students can have direct contact with some of the issues discussed in class.

5.- Tutorials.

Students may make use of the tutorials, by appointment with the course professor, in order to resolve any queries in relation to the course.

6.- Assessment: 2 hours.

The method of assessment is set out under the "Assessment" section.

ASSESSMENT

ORDINARY EXAMINATION

- Self evaluation tests: 15%.
- Group project: 25%.
- Final exam: 60%. The exam will have two differentiated parts:
 - a) Short questions, aimed at verifying the assimilation by the student of the basic concepts.
 - b) Two essay-type questions by which the student shall demonstrate comprehension of a broad subject matter.



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EXTRAORDINARY EXAMINATION SITTING

100 % of the grade shall be based on the final exam, unless specific instructions are given for students under particular circumstances.

REPEAT STUDENTS

Shall be assessed in the same manner as for the students of the ordinary examination

OFFICE HOURS

Dr. Solaun (ksolaun@globalfactor.com)

[linkedin.com/in/kepa-solaun-7866b529](https://www.linkedin.com/in/kepa-solaun-7866b529)

ORCID

• **Face-to-face meetings:** Fridays, from 11:00 am to 12:00 am. By appointment only (by email or by request at the end of the class).

• **Online meetings** will be requested by e-mail.

BIBLIOGRAFÍA BIBLIOGRAPHY AND RESOURCES

• **Basic manual:**

- Solaun, K (2021). Environmental Economics. A guide for practitioners. Pamplona, Spain: Ediciones Universidad de Navarra, SA; ISBN 978-84-313-3594-6. [Find it in the Library](#)

• **Other materials:**

- Materials provided during the theoretical and practical classes.

- Class notes.

- Audio-visual material of the professor.

• **Other reference manuals:**

- Field, B.C. and Field, M.K. (2013). Environmental economics. An introduction. New York: McGraw-Hill International Edition. (2017) [Find it in the Library](#)

- Krugman P., Wells, R. and Graddy, K. (2017). Essentials of Economics. New York: Worth Publishers. [Find it in the Library](#)

- Azqueta, D. (2007). Introducción a la economía ambiental. Madrid: Mc Graw-Hill. [Find it in the Library](#) (printed version)

- Garrod, G. and Willis, K.G. (2001). Economic Valuation of the Environment. Methods and Case Studies. Northampton (MA): Edward Elgar Publishing Limited. [Find it in the Library](#)

- Hanley M., Shogren, J.F. and White, B. (1997). Environmental Economics in Theory and Practice. Oxford University Press. [Find it in the Library](#)



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- Labandeira, X., León, C.J. and Vázquez, M.X. (2007). Economía Ambiental. Madrid: Pearson, Prentice Hall. [Find it in the Library](#)
- Pearce, D.W. and Kerry Turner, R. (1994). Environmental economics: an elementary introduction. New York: London: Harvester Wheatsheaf. [Find it in the Library](#)
- Riera, P. (2005). Manual de Economía ambiental y de los recursos naturales. Madrid: Editorial Paraninfo. [Find it in the Library](#)
- Samuelson, P. A. and Nordhaus, W. D. (2010). Economics, Nineteenth Edition. New York: McGraw-Hill. [Find it in the Library](#)
- Stavins, R.N. (ed). (2011). Economics of the Environment. Selected Readings. New York: W. W. Norton & Company. [Find it in the Library](#)