

Academic Year: ( 2019 / 2020 )

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Department assigned to the subject: Economics Department

Coordinating teacher: ALONSO BORREGO, CESAR

Type: Compulsory ECTS Credits : 6.0

Year : 4 Semester : 1

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

The prerequisite to follow this course is a basic knowledge of basic economic concepts usually introduced in courses of Principles of Economics.

## OBJECTIVES

The material taught in the first part of this course will lead the students to understanding the basic functioning of the types of markets: Competitive market, monopolistic competition, oligopolies and monopoly. After reviewing the main characteristics of the firms that operate in energy markets, students will understand that there are important market failures and very high fixed cost and therefore there is the need of government intervention and regulation. In the second part of the course students will learn how to do a cost-benefit analysis of an energy project. In particular they will learn the main differences between private cost and the social cost in the presence of externalities. The concept of opportunity cost will be introduced together with the idea of a shadow price of a project. The course will end analyzing the effects of renewable energy and its effects mitigating the climate change.

## DESCRIPTION OF CONTENTS: PROGRAMME

### Part I: Regulation of Energy Markets

The limits of the paradigm of structure-conduct-performance in the presence of strategic behavior. Optimal pricing in: competitive markets, monopolistic competition, oligopoly and monopoly. Natural monopolies and market size. Price discrimination and two-part tariffs. Main market failures in the energy sector. Regulatory institutions and competition policy authorities in Spain and Europe. The electricity sector in Spain. The role of the system operator (REE) and the market operator (OMIE). The price structure of electricity in Spain.

### Part II: Cost-Benefit Analysis

Introduction to the main goals of the cost-benefit analysis. The economic evaluation of investment projects and public policies. Measuring welfare and consumer and producer surplus. Opportunity cost and shadow price. Externalities and public goods. The private cost and the social cost of a project. Project evaluation. Discounting and decision criteria. Market for emissions, climate change and renewable energies. Incentives to invest in renewable energies.

## LEARNING ACTIVITIES AND METHODOLOGY

The teaching method will be the following:

- (1) Magistral classes, where the concepts will be developed in detail and the properties of macroeconomics models of time series will be covered. To facilitate understanding and learning of this material by the student, the students will have access to the class material (slides etc.) via Aula Global. They will also receive an ample list of complementary materials that will permit them to understand and go deeper into issues covered in class, and into some related issues of interest that may not have been covered in class.
- (2) Discussion of the exercises done by the students.
- (3) Discussions on current economics of energy issues to help the students becoming familiar with the knowledge acquired in the course and to deepen their understanding.
- (4) Practical classes in reduced groups where the students will learn to make arguments and reason in

public.

#### ASSESSMENT SYSTEM

<b>% end-of-term-examination/test:</b>	50
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	50

The final grade for the course will consist of three parts: final exam (50%), regular assignments and class participation (50%).

The student must obtain at least 40% in the final exam to pass the course. This rule applies both in the regular and the second call. In those cases in which, after weighting the grades from the continuous evaluation and the final exam, the final grade is above (or equal to) 5 but the minimum grade in the final exam is not obtained, the final grade in the course will be 4 (Failed), unless the exam grade is below 3, in which case the final grade will be 3 (Failed).

#### BASIC BIBLIOGRAPHY

- Bhattacharyya, S.C Energy Economics: Concepts, Issues, Markets , and Governance, Springer ¿Verlag, London , 2011
- Jean Tirole The Theory of Industrial Organization, The MIT Press, 1990
- de Rus, G. Introduction to Cost-Benefit Analysis: Looking for Reasonable Shortcuts, Edward Elgar, 2010

#### ADDITIONAL BIBLIOGRAPHY

- Boardman, A., D. Greenberg, A. Vining and D. Weimer Cost-Benefit Analysis: Concepts and Practice, 3rd edition. Prentice Hall, 2005
- Jeffrey Church, Roger Ware Industrial Organization: A Strategic Approach, McGraw-Hill, 2000