Academic Year/course: 2021/22

27423 - Econometrics I

Syllabus Information

Academic Year: 2021/22
Subject: 27423 - Econometría I
Faculty / School: 109 - Facultad de Economía y Empresa
Degree: 417 - Degree in Economics
ECTS: 6.0
Year: 3
Semester: First semester
Subject Type: Compulsory
Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The teaching method for the subject of Econometrics I implies the use of the following techniques aimed at the achievement of specific objectives:

- Lectures: Aimed at presenting the main concepts of the subject, conveniently structured in units, according to the syllabus presented below.
- Practice sessions: The teacher will provide a collection of exercises as well as theoretical-practical questions related to the subject, so that the students can feel confident using all the instruments involved in the theoretical perspective of the Econometrics I course. The sessions will be devoted to solving some of these questions on the blackboard, encouraging the participation of the students.
- Practice sessions in computer lab: This activity will be developed in the computer rooms, and practical cases will be solved by using econometric software. These practical lessons are based on the theoretical and practical knowledge previously acquired.
- Tutorials: The objective is to follow-up student´s work and solve individual doubts, as well as offering a more direct support to the students.
- Non-class activities: individual work of the student (75 horas).

4.2. Learning tasks

The content of the subject will be developed during the theoretical and practical sessions, following the structure which is established below in the syllabus and which will be presented in the first session of the course. In practical sessions we will alternate computer and blackboard.

The learning method is designed for sessions in a classroom. However, if it were necessary, due to the health situation, the sessions would be online.

4.3. Syllabus

PART I INTRODUCTION

1   Concept and Aims of Econometrics

1.1 The method of the Economic Science

1.2 Quantifying the Economic Theories

1.3 Model elements

1.4 The stages in the Econometric Methodology

PART II STATISTICAL INSTRUMENTS

2   Statistical concepts

2.1 Random variables. Moment Algebra

2.2 Expected values vector and variance-covariance matrix

2.3 Covariance matrix between two vectors

2.4 Multivariate normal distribution

2.5 Other probablility distributions

PART III MULTIPLE REGRESSION MODEL

3   The Multiple Regression Model. Specification and Estimation

3.1 The Classical Assumptions

3.2 Least Squares Estimation. Statistical properties

3.3 Maximum Likelihood Estimation. Statistical properties

3.4 Interval Estimation

4   The Multiple Regression Model. Validity and Prediction

4.1 Introduction and Measures of Fit

4.2 Individual Hypothesis Testing about the Parameters

4.3 Joint Test of Hypotheses

4.4 Testing Linear Restrictions

4.5 Analysis of Variance

4.6 Prediction

5   Verifying the Classical Assumptions about the Non-random Part of the Model

5.1 Omitted Variables and Irrelevant Variables

5.2 Previous information about the coefficients. Restricted and Unrestricted Regressions

5.3 Multicollinearity

5.4 Functional form

5.5 Dummy Variables and Structural Change

4.4. Course planning and calendar

The Econometrics I course consists of 150 hours (6 credits ECTS), which are structured into 75 class hours and 75 non-class hours. Of the former, 30 will have a theoretical content, while another 30 hours will be devoted to practical sessions, and the remaining 15 hours will be tutorials. The distribution of time among the five units of the syllabus will depend on their complexity. In general terms, teachers will adopt the following schedule:

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Total

Theoretical lessons	2	4	8	8	8	30
Blackboard Practices	1	4	2	4	4	15
Computer Practices	1		4	4	6	15
Tutorial	2	3	3	3	4	15
Total Hours	**8**	**11**	**18**	**16**	**20**	**75**

This distribution may be modified as the course progresses, and there may even be some differences between the groups. Voluntary testing will be incorporated into the schedule at the right time, with the following important dates.

- First day of the course: presentation.

- Lectures and practical sessions.

- Voluntary testing.

- Final test in the corresponding date.