

## 27324 - Econometrics

### Información del Plan Docente

<b>Academic Year</b>	2016/17
<b>Academic center</b>	109 - Facultad de Economía y Empresa 228 - Facultad de Empresa y Gestión Pública 301 - Facultad de Ciencias Sociales y Humanas
<b>Degree</b>	454 - Degree in Business Administration and Management 458 - Degree in Business Administration and Management 448 - Degree in Business Administration and Management
<b>ECTS</b>	6.0
<b>Course</b>	3
<b>Period</b>	First semester
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

### **1.Basic info**

#### **1.1.Recommendations to take this course**

#### **1.2.Activities and key dates for the course**

### **2.Initiation**

#### **2.1.Learning outcomes that define the subject**

#### **2.2.Introduction**

### **3.Context and competences**

#### **3.1.Goals**

#### **3.2.Context and meaning of the subject in the degree**

#### **3.3.Competences**

#### **3.4.Importance of learning outcomes**

### **4.Evaluation**

### **5.Activities and resources**

#### **5.1.General methodological presentation**

The teaching method for the subject of Econometric implies the use of different techniques aimed at the achievement of specific objectives.

The part of the subject that deals with more theoretical and methodological issues, will be presented in lectures. In these

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sessions, the teacher will explain the main concepts of the econometric method, stressing economic interpretation and practical uses. That is, teachers will try to reduce theoretical issues to the minimum, and specific theoretical proofs and extensions will be provided to the student through the supporting material. To support knowledge in econometric method, and with the purpose of illustrating the use of the instruments previously studied, we will introduce regular theoretical-practical sessions in which the students, supported by the teacher, will solve small problems or study cases.

To stress the practical dimension of the subject, students will work with different software packages which deal with the search and use of useful statistical information and its treatment for econometric purposes. This work will be regularly distributed throughout the course in sessions specifically aimed at the use of econometric software.

The teaching material that the teacher will offer to the students includes, sorted by units, some guides summarising the main concepts, a problem collection as well as some theoretical-practical questions for the student to practice on his own. Teachers will also provide students with some proposed study cases, which should be solved using the recommended software, as well as some additional material for those students who desire to extend their knowledge of Econometrics. All this information will be provided through the " *Anillo Digital Docente*" (ADD) of the University of Zaragoza.

### 5.2.Learning activities

The syllabus offered to students will help them to achieve the proposed goals and it consists of the following activities:

**Theoretical lessons:** They make up, approximately, 50% of the teaching activities and they are aimed at presenting the main concepts of the subject, conveniently structured into units. The teacher will formally present the corresponding material, which students have to strengthen and extend using the recommended bibliography. We recommend students to attend lessons, participate, take notes about the teachers' explanations as well as asking about any doubts and further explanations they might need. Teachers will provide the students with all the necessary teaching material to enable them to properly understand this Econometrics course.

**Theoretical-practical lessons :** The teacher will provide students with a problem collection, as well as theoretical-practical questions related to the subject, well in advance. The main purpose of this material is for students to feel confidence with the use of all the instruments involved in the theoretical perspective of this Econometrics course. During the sessions, at least one hour every two weeks will be devoted to solving some of these questions, encouraging the participation or/and discussion between the students.

**Practical lessons in computer lab :** This activity will be developed in the computer rooms that the Centre has reserved for the subject. The objective is twofold. On the one hand, we aim at getting students used to managing large amounts of quantitative information, which is a key aspect for their skills. On the other hand, it is important for students to gain confidence in the use of econometric software, at user level. In these sessions, practical cases will be solved by the teacher, who will guide the students' learning process.

**Tutorial :** The teacher will schedule a tutorial calendar which will be published well in

### 5.3.Program

#### PART I. INTRODUCTION

Unit 1. Introduction

1.1. The object of Econometric

1.2. Econometric models and its elements

1.3. Type of data and models

1.4. A perspective of the subject

## **PART II. The General Lineal Model**

Unit 2. Specification and estimation of the General Lineal Model

2.1. Introduction

2.2. Hypothesis of the model

2.3. Maximum Likelihood estimation. Properties of the estimators

2.4. Minimum Least Square estimation. Properties of the estimators

2.5. Interval estimation

2.6. Interpretation of estimated parameter

Unit 3. Validation and prediction

3.1. Hypothesis testing

3.2. Goodness of fit measures

3.3. Prediction

## **PART III. SOME EXTENTIONS OF THE GENERAL LINEAL MODEL**

Unit 4. Diagnosis of the systematic part of the model

4.1. Introduction

4.2. Functional form analysis

4.3. Multicollinearity

4.4. Qualitative explicative variables

Unit 5. Diagnosis of the random part of the model

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5.1. Introduction

5.2. Heteroscedasticity

5.3. Autocorrelation

5.4. Normality

### 5.4.Planning and scheduling

The subject of Econometric has a total of 150 hours (6 credits ECTS), which are structured into 75 class hours and 75 non-class hours. With respect to the first, 30 will have a theoretical content, 30 will be devoted to practical lessons and the remaining 15 will be tutorials. The distribution of the lessons among the five units of the syllabus will depend on their complexity. In general terms, teachers will adopt the following schedule:

Table 1. Presently hours in Econometric. ADE Grade

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Total
Lessons						
(Theoretical and master)	2	7	7	8	6	30
Blackboard Practices		2	2	4	2	10
Computer Practices		4	4	7	5	20
Tutorial	2	2	3	5	3	15
Total class hours	4	15	16	24	16	75

Table 2. Distribution of non-presently hours of Econometric. ADE Grade.

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Total
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Individual study	4	12	16	16	16	64
Individual practical work	0	3	2	3	3	11
Total non-class hours	4	15	18	19	19	75

The presently sessions will be developed following the calendar published by the centre for this grade.

### 5.5. Bibliography and recommended resources

UPDATED BIBLIOGRAPHY IS AVAILABLE THROUGH THE WEBSITE OF THE LIBRARY:

<http://psfunizar7.unizar.es/br13/eBuscar.php?tipo=a>