



UNIVERSIDAD DE LA RIOJA  
FACULTY OF BUSINESS SCIENCE

DEGREE IN  
BUSINESS ADMINISTRATION AND  
MANAGEMENT

PROGRAMME

**INTRODUCTION  
TO ECONOMETRICS**

(Code 2071006)

YEAR 2 – TERM 2

**CORE SUBJECT: 6 CREDITS**

**(Theoretical classes: 4 credits. Classroom practicals: 0.5 credits.**

**IT classroom practicals: 1.5 credits)**

LECTURER:

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ACADEMIC YEAR **2005/2006**

DEPARTMENT OF ECONOMICS AND BUSINESS



## GENERAL OBJECTIVES OF THE COURSE

The general objectives of the course are as follows:

- Introduce students to the basic elements of the general econometric procedure based on the study of the Simple Linear Regression Model, in order to equip them with the basic knowledge required for performing quantitative analyses of economic models. To achieve this objective, students must be able to use specific statistical concepts which will be studied previously.
- Familiarise students with the use of general econometric software in empirical research using the *EViews* 5.0 program (QMS).

## METHODOLOGY AND STUDY PLAN

Bearing in mind the special nature of econometrics within economics in general due to its basic mathematical and statistical principles, this subject is taught by means of theoretical and practical classes with the use of IT resources. Teaching of this subject is enhanced by means of group practical work and complemented by support classes or attendance-based tutorials, as well as network-based tutorials.

## ASSESSMENT SYSTEM

### — Option A:

Completion of a proposed project; the assessment of this project will account for 15% of the student's final mark. The remaining 85% will correspond to the mark obtained by the student in a theoretical-practical written examination. To pass the subject, students must obtain the minimum mark established for this test.

#### ■ Proposed project:

This will consist in the development of an econometric research project and may be performed in groups formed by a maximum of three students. The content of the project will consist of the estimation of an economic model, the comparison of certain relevant hypotheses and prediction for extrasample data. The project, in addition to explaining the econometric theory studied in class, will help students to become familiar with econometric packages used in empirical research (*E-Views* 5.0) and will account for 15% of the final mark.

### — Option B:

Examination only assessment: A theoretical-practical examination that will include, in addition to the same written test envisaged for students selecting option A, other additional questions on the use of the *EViews* 5.0 econometric software program.

## ANALYTICAL PROGRAMME

### ***PART I: ECONOMETRICS AND ECONOMETRIC MODELS***

#### **Topic 1. Concept, method and evolution of Econometrics**

- 1.1. Introduction
- 1.2. Concept and object of Econometrics
- 1.3. Econometric methodology
  - 1.3.1. The general econometric procedure
  - 1.3.2. Phases of the general econometric procedure
- 1.4. Origins and evolution of Econometrics

OBJECTIVES: Introduce students to the main aspects of econometrics and general econometric procedure.

#### BIBLIOGRAPHY:

- **Theory:** chapter 1 of Guisan (1997) and chapter 1 of Díaz and Llorente (1998).
- **Practicals:** Econometric Society. URL: <http://www.econometricsociety.org/>  
Cowles Foundation for Research in Economics.  
URL: <http://cowles.econ.yale.edu/>

#### **Topic 2. Econometric models**

- 2.1. Economic and econometric models
- 2.2. Elements of an econometric model
- 2.3. Main types of econometric models

OBJECTIVES: Provide students with a overview of the most relevant aspects of econometric modelling.

#### BIBLIOGRAPHY:

- **Theory:** chapter 1 of Guisan (1997) and chapter 1 of Díaz and Llorente (1998).
- **Practicals:** Instituto Nacional de Estadística. URL: <http://www.ine.es>  
Online Resources for Econometric Students.  
URL: [http://www.oswego.edu/~kane/econometrics/stud\\_resources.htm](http://www.oswego.edu/~kane/econometrics/stud_resources.htm)

### ***PART II: REVIEW OF BASIC STATISTICAL CONCEPTS***

#### **Topic 3. Basic statistical concepts in Econometrics**

- 3.1. Statistical inference I: estimation
- 3.2. Statistical inference II: hypotheses testing
- 3.3. Statistical distributions

OBJECTIVES: Review some basic statistical concepts for understanding the Simple Linear Regression Model.

#### BIBLIOGRAPHY:

- **Theory:** chapters 7, 9 and 10 of Novalés (1996) and chapter 5 of Kmenta (1997).
- **Practicals:** chapters 7, 9 and 10 of Novalés (1996) and chapter 5 of Kmenta (1997).

### ***PART III: THE SIMPLE LINEAR REGRESSION MODEL (SLRM)***

#### **Topic 4. The Simple Linear Regression Model (I): specification and estimation**

- 4.1. Justification of the Simple Linear Regression Model (SLRM)
- 4.2. Specification of the model: case studies
- 4.3. Estimation of parameters and their interpretation
- 4.4. Properties of estimators and their distributions

OBJECTIVES: Study the specification and estimation stages of the Simple Linear Regression Model (SLRM), as well as its application in specific situations.

BIBLIOGRAPHY:

- **Theory:** chapter 2 of Alonso et al. (2004), chapter 3 of Trávez (2004), chapter 1 of Johnston and Dinardo (2001) and chapter 2 of Díaz and Llorente (1998).
- **Practicals:** Pena et al. (1999) chapter 2, Alcaide et al. (2001) chapter 2, and Martín et al. (1997) chapter 1.

#### **Topic 5. The Simple Linear Regression Model (II): validation and prediction**

- 5.1. Inference in the Simple Linear Regression Model (SLRM)
- 5.2. Comparison of individual and joint hypotheses
- 5.3. Point and interval prediction
- 5.4. Applications

OBJECTIVES: Complete the analysis of the stages of the general econometric procedure (validation and prediction).

BIBLIOGRAPHY:

- **Theory:** chapter 2 of Alonso et al. (2004), chapter 4 of Trávez (2004), chapter 1 of Johnston and Dinardo (2001) and chapter 3 of Díaz and Llorente (1998).
- **Practicals:** Pena et al. (1999) chapter 2, Alcaide et al. (2001) chapters 2 and 3, and Martín et al. (1997) chapter 1.

### ***PART IV: ECONOMETRIC SOFTWARE PACKAGES***

#### **Topic 6. Introduction to “Econometric—Views” 5.0 (QMS)**

- 6.1. Introduction
- 6.2. **Working with *EViews*:** objects
- 6.3. Data processing
- 6.4. Descriptive statistics
- 6.5. Regression

OBJECTIVES: Familiarise students with the use of standard econometric software used in empirical research: *EViews* 5.0 programme (QMS).

BIBLIOGRAPHY:

- **Practicals:** *EViews User Guide* and Carrascal et al. (2000) chapters 1 to 7.

## BASIC BIBLIOGRAPHY

### – Theory:

ALONSO, A., J. FERNÁNDEZ and I. GALLASTEGUI (2004) *Econometría*. Madrid: Pearson—Prentice Hall.

DÍAZ, M. and M. M. LLORENTE (1998) *Econometría*. Madrid: Pirámide.

GUISAN, M. C. (1997) *Econometría*. Madrid: McGraw-Hill.

**JOHNSTON, J. and J. DINARDO (2001) *Métodos de econometría*. Barcelona: Vicens Vices.**

KMENTA, J. (1977) *Elementos de econometría*. Barcelona: Vicens Vices.

TRÍVEZ, F. J. (2004) *Introducción a la econometría*. Madrid: Pirámide.

### – Applications:

ALCAIDE, A., N. ÁLVAREZ, A. BARBA, P. PÉREZ, P. RAYEGO and B. SANZ (2001) *Aplicaciones econométricas*. Madrid: Cuadernos de la UNED.

CARRASCAL, U., Y. GONZÁLEZ and B. RODRÍGUEZ (2000) *Análisis Económico con EViews*. Madrid: Ra-Ma.

MARTÍN, G., J. M. LABEAGA and F. MOCHÓN (1997) *Introducción a la econometría*. Madrid: Prentice Hall.

**PENA, B., J. ESTAVILLO, M. E. GALINDO, M. J. LECETA and M. M. ZAMORA (1999) *Cien ejercicios de econometría*. Madrid: Pirámide.**

## ADDITIONAL BIBLIOGRAPHY

GREENE, W. H. (1999) *Análisis econométrico*. Madrid: Prentice Hall.

HILL, R. C., W. E. GRIFFITHS and G. G. JUDGE (2001) *Undergraduate Econometrics*. New York: John Wiley & Sons.

JUDGE, G. G., R. C. HILL, W. E. GRIFFITHS, H. LÜTKEPOHL and T. C. LEE (1988) *Introduction to the Theory and Practice of Econometrics*. New York: John Wiley & Sons.

TRÍVEZ, F. J. (1996) *Introducción a la econometría*. México: Prentice Hall.

MARTÍN, G., J. M. LABEAGA and F. MOCHÓN (2000) *Introducción a la econometría*. Madrid: Prentice Hall.

## OTHER COURSES FOR WHICH THIS ONE IS A PRE-REQUISITE

“*Introduction to Econometrics*” focuses on the study of the Simple Linear Regression Model (SLRM) under the basic hypotheses. Students must have an understanding of its contents before taking “*Econometrics I*” and “*Econometrics II*” in the third year and “*Economic prediction and conjecture*” in the final year of the degree.