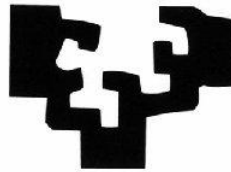


Code: 1571i & 1547i
Degree: LE & LADE
Year: 3
Curricular Line: All
Quarter: 1
Credits: 6

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Universidad del País Vasco Euskal Herriko Unibertsitatea

Facultad de Ciencias Económicas y Empresariales
Ekonomi Eta Enpresa Zientzien Fakultatea

INTRODUCTORY ECONOMETRICS
Course Contents

Academic Year
2008/2009

Year
3

Degree: L Economía & L Administración y Dirección de Empresas

Curricular Line: All / Type: Compulsory (Core)

**Department:
Econometrics & Statistics (EAIII)**

Teacher responsible during 2008/09:

1. Dr. Javier Fernández Macho

Objectives:

To provide a basic-to-intermediate-level introduction to the theory and practice of Econometrics through the medium of English.
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Pre-requisites: An elementary knowledge of linear algebra and calculus (Matemáticas I, II & III or equivalent) and of basic statistical theory (Elementos de Probabilidad y Estadística and Estadística Empresarial or equivalent) will be useful.

Subject page: <http://moodle.ehu.es/IEcnmtx>

Syllabus structure:

1. Introduction to Econometrics

- 1.1. Elements of Econometrics.
- 1.2. Concept of Model. Economic Model vs Econometric Model. Example.
- 1.3. The Econometric Model. The error term.
- 1.4. Stages in the elaboration of an Econometric Model.

Basic Reference: AFG: c1. Other References: Wooldridge: c1. Ramanathan: c1. Gujarati: c1, c2.

2. The Linear Regression Model (I). Specification and Estimation.

- 2.1. General Linear Regression Model (GLRM): Specification and assumptions.
- 2.2. Method of Ordinary Least Squares (OLS). Normal Equations.
- 2.3. Properties of the Sample Regression Function.
- 2.4. Goodness of Fit: the Coefficient of Determination (R^2). Estimation of the error variance.
- 2.5. Finite-sample Properties of the OLS Estimator. The Gauss-Markov Theorem.

- 2.7. Specification problems: omission of relevant variables and multicollinearity.
- 2.8. The Least-Squares Estimator under Restrictions.

Basic Reference: AFG: c2, c3, c6. Other References: Wooldridge: c2, c3. Ramanathan: c3, c4, c5. Gujarati: c3, c4, c6, c8, c9, c13. Exercises: **AFG:** Appendices B, C, D: 2.1 thru 3.23 and 6.45 thru 7.67.

3. The Linear Regression Model (II). Inference and Prediction.

- 3.1. The Least-Squares Estimator under Normality.
- 3.2. Single and Multiple Significance Tests. Confidence Intervals.
- 3.3. General Tests of Linear Restrictions.
- 3.4. Tests based on the Residual Sum of Squares.
- 3.5. Point and Interval Prediction.

Basic Reference: AFG: c4, c5. Other References: Wooldridge: c4, c6. Ramanathan: c3, c4. Gujarati: c5, c7, c8, c15. Exercises: **AFG:** Appendices B, C, D: 4.24 thru 5.44.

4. Dummy Variables


- 4.1. Dummy Variables. Definition and use in the GLRM.
- 4.2. Seasonal effects.
- 4.3. Interaction with explanatory variables.

Basic Reference: AFG: c7. Other References: Wooldridge: c7. Ramanathan: c7. Gujarati: c15. Exercises: **AFG:** Appendices B, C, D: 6.45 thru 7.67.

Specific competences:

1. To analyse critically the basic elements of Econometrics in order to understand the logic of econometric modelling and be able to specify causal relationships among economic variables.
2. To identify the relevant statistical sources in order to be able to search for, organise and systematically arrange available economic data.
3. To use with confidence appropriate statistical methods and available computing tools in order to correctly estimate and validate econometric models.
4. To handle econometric prediction tools in order to estimate unknown or future values of an economic variable.
5. To interpret adequately the results obtained in order to be able to write meaningful reports about the behaviour of economic data.

Methodology:

Classroom lectures, classroom exercises, computer laboratory classes and seminars plus tutorials (in person & by email). The subject page (<http://moodle.ehu.es/IEcnmtx>) will be used to store, among other things, all the teaching material used throughout the course (contents, timetable, exercises, handouts, data, etc.). See also the  teaching support platform at <http://moodle.ehu.es>.

Teaching Material: Projection Slides, Lecture Notes and Handouts.

Written work: Practical exercises will be provided and discussed in the classes. Students may be expected to hand in written answers to set problems.

Assessment:

All the competences will be evaluated **either** through *continuous evaluation* process **or** via a *final exam*.

1.- *continuous evaluation*:

The total mark will be obtained as follows:

- Active participation in the classroom plus individual resolution of activities proposed during practical & computer laboratory classes and auto-evaluation: up to 20%
- Execution and presentation of a group project: up to 25%

- Written test: up to 55%

2.- *final exam*:

In any case, as stipulated in Article 45 (section 3d), the student will have right to a final exam that will take place on the official date approved by the Faculty board.

This final exam, that will evaluate the above mentioned competences as well as the degree of fulfilment of the objectives set in this program, will consist of two parts:

- a. Written test: 50% of the total mark
- b. Practical test in computer laboratory: 50% of the total mark

In the June's call, all the students will be evaluated by means of this last method of evaluation, the final exam.

Main Bibliographic References:

- 1 **AFG:** Alonso Fernández Gallastegui (2004), *Econometría*, Prentice-Hall (Pearson) ; ISBN: 84-205-4460-4.

Other Bibliographic References:

Textbooks:

- 3 Gujarati, D., (2003), *Basic Econometrics*, 4th ed., McGraw-Hill.
- 4 Ramanathan, R., (2002), *Introductory Econometrics with Applications*, 5th ed., SouthWestern.
- 5 Wooldridge, J.M., (2003), *Introductory Econometrics*, 2nd ed., Thomson.

Exercises:

- 1 **AFG:** Alonso Fernández Gallastegui (2004), *Econometría*, Appendices, Prentice-Hall (Pearson).
- 2 Fernández, A., González, P., Regúlez, M., Moral, M.P., Esteban, M.V. (2005), *Ejercicios de Econometría*, 2ª ed., McGraw-Hill.
- 3 Alegre, J., Arcarons, J., Bolanc,, C. y Díaz, L. (1995), *Ejercicios y Problemas de Econometría*, Colección Plan Nuevo, Ed.AC.
- 4 Aznar, A. y García, A. (1988), *Problemas de Econometría*, 3ª ed, Ed.

- Pirámide.
- 5 Carrascal, U., Y. González, B. Rodríguez (2001). Análisis econométrico con EViews. Editorial Ra-Ma.
 - 6 Ejercicios de exámenes de Introducción a la Econometría LE. Departamento de Economía Aplicada III (Econometría y Estadística). eKASI.
 - 7 Clases Prácticas. Introducción a la Econometría para Economía (2007). eKASI.

Internet addresses of interest:

➤ **Subject page:**

<http://moodle.ehu.es/IEcnmtx>

➤ **Software**

<http://gretl.sourceforge.net>. GRET: Open source econometric package, User manual and Data (English and Spanish versions).

➤ **Institutions**

- 1) <http://www.eustat.es>. EUSTAT
- 2) <http://www.ine.es>. INE
- 3) <http://www.bde.es>. Bank of Spain.
- 4) <http://ec.europa.eu/eurostat>. EUROSTAT
- 5) <http://www.oecd.org> OECD
- 6) <http://www.imf.org>. International Monetary Fund.
- 7) <http://www.worldbank.org>. World Bank.
- 8) <http://www.bolsamadrid.es> Madrid Stock Market

➤ **Data**

- 1) http://www.nber.org/data_index.html
- 2) <http://www.estadief.minhac.es/>
- 3) <http://fisher.osu.edu/fin/osudown.htm>
- 4) <http://econ.queensu.ca/jae/>
- 5) <http://www.psidonline.isr.umich.edu/data/>
- 6) <http://www.census.gov/>

➤ **Econometric journals (English)**

- [Computational Economics](#)
- [Econometrica](#)
- [Econometric Reviews](#)
- [Econometric Theory](#)
- [Empirical Economics Journal](#)
- [International Journal of Forecasting](#)
- [Journal of Applied Econometrics](#)
- [Journal of Business and Economic Statistics](#)
- [Journal of Econometrics](#)
- [Journal of Economic Dynamics and Control](#)
- [Journal of Forecasting](#)
- [Oxford Bulletin of Economics and Statistics](#)
- [Review of Economics and Statistics](#)
- [Review of Economic Studies](#)
- [Studies in Nonlinear Dynamics and Econometrics](#)

And many many more... browse [UPV/EHU library--online journals](#).

➤ **Econometric journals (Spanish)**

- 1) <http://www.revecap.com>. Revista de Economía Aplicada
- 2) <http://www.revistaestudiosregionales.com>. Revista de Estudios Regionales
- 3) <http://www.funep.es/invecon/sp/sie.asp>. : Investigaciones Económicas
- 4) <http://www1.euskadi.net/ekonomiaz>. Ekonomiaz