

Degree	Type	Year
2503852 Applied Statistics	OB	2

## Contact

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## Teaching groups languages

You can view this information at the [end](#) of this document.

## Prerequisites

It is recommended that the student have studied mathematics, statistics and linear models that have given him knowledge in linear algebra, matrix analysis, theory of probability and inference statistics (estimation and contrast of hypotheses).

## Objectives and Contextualisation

The main objective of the course is to provide students with basic knowledge (theoretical and practical) of the econometric analysis of uniequational models. The student will acquire the necessary capacity to perform the specification, estimation and contrast of applied econometric models and studies, as well as the ability to interpret general econometric results.

## Learning Outcomes

1. CM14 (Competence) Propose the statistical model needed to analyse data sets belonging to real studies.
2. KM17 (Knowledge) Recognise the statistical models for the analysis of data with different structures and complexities that frequently appear in different fields of application.
3. KM18 (Knowledge) Recognise the language of applications of economics and finances, biomedical science and engineering, provided by research and innovation in the field of statistics.
4. KM18 (Knowledge) Recognise the language of applications of economics and finances, biomedical science and engineering, provided by research and innovation in the field of statistics.
5. SM16 (Skill) Select appropriate sources of information for the statistical work.

## Content

(T: theory, S: problems or seminars, PS: preparation of problems or seminars, L: laboratories, PP: practical preparation, E: study, AA: other activities, indicate the number of hours dedicated to each activity)

#### Unit 1: Introduction

- What is econometrics?
- Economic models and econometric models
- The economic series and its problems

#### Unit 2: The linear regression model

- Non-linearity in the variables and most common transformations in economics
- Interpretation of the parameters in economic models: elasticities and semi-elasticities
- Estimate for Ordinary Least Squares
- Contrasts
- Prediction
- Fictitious variables: application into testing structural change

#### Unit 3: Specification errors

- Specification errors
- Missing relevant variables
- Inclusion of irrelevant variables
- Functional form erroneous

#### Unit 4: Extension of the linear regression model

- Data scaling
- Multicollinearity
- Heteroscedasticity
- Autocorrelation
- Generalized least squares

#### Unit 5: Dynamic Models

- Regression analysis with time series Distributed delay models
- Autoregressive models
- Instrumental variables estimation

#### Unit 6: Models with discrete dependent variable

- Linear probability model
- LOGIT model
- PROBIT model

### Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Laboratory practices	30	1.2	
Theory	30	1.2	
Type: Supervised			
Solving problems	30	1.2	

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Type: Autonomous

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Study

60

2.4

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Two hours of theoretical classes a week plus two of practices (with econometric software) and resolution of exercises related to the contents explained in class in order to favor the assimilation of this knowledge by the student.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

## Assessment

### Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Delivery of Exercises and Empirical Work	20%	0	0	KM17
Final exam	40%	0	0	CM14, KM18
Practice Test	20%	0	0	KM18
Written Test	20%	0	0	SM16

The activities to evaluate the subject will be:

1. Written test to be held in class classroom about the subject explained. This test does NOT release matter and represents 20% of the final grade.
2. Practice test to be held in the computer room. This test does NOT release matter and represents 20% of the final grade.
3. A final exam on all course subjects. This test will contain theoretical and practical aspects, and represents 40% of the final grade.
4. Delivery of exercises and empirical work. During the course the students will have to give lists of problems and an empirical work. This activity will represent 20% of the final mark.

A student who has not participated in any of the described assessment activities will receive the "Not presented" qualification. If a student performs some of the assessment activities, even if it is only one, you can no longer opt for a "Not Presented".

In the case of failing the subject, the students will have the possibility of presenting themselves to a retake exam. In order to opt for this option it is essential to have submitted to both partial tests and to the final exam. The note of the retake exam replaces the note of the partial and the final exam. Therefore, notes on exercise deliveries and empirical work are not recoverable.

Attention: "Notwithstanding other disciplinary measures that are deemed opportune, and in accordance with the current academic regulations, the irregularities committed by the student who can lead to a variation of the qualification of an evaluation act will be graded with a zero. Therefore, plagiarizing, copying or letting copying a practice or any other evaluation activity will imply failing it with a zero and can not be recovered in the same academic year. If this activity has a minimum associated mark, then the subject will be failed. "

## Bibliography

- Wooldridge, J.M. "Introductory Econometrics: A Modern Approach". Cengage learning. (available online UAB library)
- Fernández, M.D. and Llorente Marrón, M.M. "Econometría". Ediciones Pirámide. (Spanish)
- Gujarati, M. "Basic Econometrics". McGrawHill.
- Johnston, J. "Econometrics Methods". McGraw.
- Maddala, G.S. "Introduction to Econometrics". Wiley.
- Martín, G., Labeaga, J.M.; Mochón, F. "Introducción a la Econometría". Prentice-Hall. (Spanish)
- Novales, A. "Econometría"- McGrawHill. (Spanish)
- Pulido, A., Pérez, J.. "Modelos Económicos: Guía para la elaboración de modelos econométricos con Eviews". Ed. Pirámide. (Spanish)

## Software

Lab practices will take place using R studio.

## Language list

Name	Group	Language	Semester	Turn
(PLAB) Practical laboratories	1	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	2	Catalan	second semester	morning-mixed
(TE) Theory	1	Catalan	second semester	morning-mixed