# COURSE DATA

## DATA SUBJECT

**Code:** 35942
**Name:** Econometrics
**Cycle:** Undergraduate Studies
**ECTS Credits:** 4.5
**Academic year:** 2026-27

## STUDY (S)

| Degree | Center | Acad. year | Period |
|---|---|---|---|
| 1315 - Degree in Finance and Accounting | Facultat d'Economia | 2 | Second quarter |

## SUBJECT-MATTER

| Degree | Subject-matter | Character |
|---|---|---|
| 1315 - Degree in Finance and Accounting | Econometrics | COMPULSORY |

## COORDINATION

SERRANO DOMINGO GUADALUPE

# SUMMARY

*Econometrics* is taught in the second term of the second year of the degree in Finance and Accounting, in the set of subjects that students must study in the Quantitative Methods module. It is compulsory and semester-long, with a total of 4.5 credits (1.5 theoretical and 3 computer / practical).

The objective of the subject is to provide students with the basic knowledge of an academic discipline such as *Econometrics*, which combines concepts from Economic Theory, Mathematics and Statistics and whose purpose will be to provide students with analytical tools and adequate quantitatives to address the analysis of the economic (financial and corporate) reality. The formulation and testing of hypotheses about the functioning of that reality, as well as the making of predictions about its immediate future will be the object of study in this matter.

As a mathematical and statistical discipline, students must use the previous knowledge of calculus and statistics they already have from other subjects. Therefore, it is a training subject with a broad spectrum of theoretical / practical content that is based on the students previous skills and which, with the support of certain computer tools, allows them to obtain a comprehensive view of the quantitative analysis instruments used in the study and prediction of economic and business reality.

The essential content of the subject is mainly focused on the development of the linear regression model,

its hypotheses and associated problems. However, the program also includes an essential topic in the field of finance, such as the study of time series, its concept and estimation, albeit as an introduction. Therefore, the program of the subject is divided into three main blocks: linear regression model, non-compliance with the basic hypotheses in said model and introduction to time series.

## PREVIOUS KNOWLEDGE

### RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

### OTHER REQUIREMENTS

No previous requisites. It is recommended to have studied Mathematics I and II and Statistics I of the first year, as well as Statistics II of the second year, in the first semester.

## COMPETENCES / LEARNING OUTCOMES

### 1315 - Degree in Finance and Accounting

CM3FYC 1 Conocer el lenguaje estadístico y las capacidades y límites del modelo estadístico para describir una situación financiera y empresarial.

CM3FYC 2 Conocer y comprender las herramientas estadísticas y econométricas básicas para la presentación, análisis, diagnóstico y prospección de resultados financieros y empresariales.

## DESCRIPTION OF CONTENTS

In this first block, the concept of econometrics is introduced and the basic reference of this program is analysed in detail: the linear regression model. In this sense, the basic hypotheses and properties of this model are analysed, as well as all the stages of the analysis from the perspective of econometric modelling, that is, estimation, validation and prediction. Likewise, all the implications derived from it are analysed when we incorporate qualitative information into the model.

Unit 1. Econometric models and economic data.
1.1. What is Econometrics.
1.2. Stages in econometric modelling.
1.3. Economic data.
Unit 2. The linear regression model.
2.1. simple regression model.
2.2. The multiple linear regression model.
2.3. Interpretation of coefficients: the ceteris paribus clause.
2.4. Units of measure and functional forms.

## 1. BLOCK I. THE LINEAR REGRESSION MODEL

In this first block, the concept of econometrics is introduced and the basic reference of this program is analysed in detail: the linear regression model. In this sense, the basic hypotheses and properties of this model are analysed, as well as all the stages of the analysis from the perspective of econometric modelling, that is, estimation, validation and prediction. Likewise, all the implications derived from it are analysed when we incorporate qualitative information into the model.

Unit 1. Econometric models and economic data.
1.1. What is Econometrics.
1.2. Stages in econometric modelling.
1.3. Economic data.
Unit 3. Test hypothesis.
3.1. Properties of the regression model.
3.2. Measures of goodness of fit.
3.3. Hypothesis testing.
3.4. Prediction.
Unit 4. Multiple regression analysis with qualitative information.
4.1. The dummy variables.
4.2. Interpretation of dummy variable coefficients.
4.3. Multiple categories.
4.4. Interaction effects.

## 2. BLOCK II. EXTENSION OF THE BASIC LINEAR MODEL

This block reviews the problems and solutions of the linear regression model when some of its basic hypotheses are broken.

Unit 5. Violation of the basic hypotheses.
5.1. Multicollinearity and specification errors.
5.2. Normality.
5.3. Heteroskedasticity.
5.4. Autocorrelation.

## 3. BLOCK III. INTRODUCTION TO TIME SERIES

This block focuses on the prediction framework in contexts of uncertainty, with a type of data specific to financial analysis, such as data from time series. An introductory analysis of its components, as well as their estimation, will be the subject of this topic.

Unit 6. Time Series.
6.1. Introduction to the analysis of time series.
6.2. Non-observable components of a time series.

## WORKLOAD

## PRESENCIAL ACTIVITIES

| Activity | Hours |
|---|---|
| Theory | 15,00 |
| Computer classroom practice | 30,00 |
| **Total hours** | **45,00** |

## NON PRESENCIAL ACTIVITIES

| Activity | Hours |
|---|---|
| Attendance at other activities | 0,00 |
| Individual or group project | 13,50 |
| Independent study and work | 10,00 |
| Preparation of lessons | 23,00 |
| Preparation for assessment activities | 12,00 |
| Resolution of case studies | 9,00 |
| **Total hours** | **67,50** |

# TEACHING METHODOLOGY

The methodology to teach *Econometrics*, both in the theoretical and practical classes, will be oriented to combine a of the subject, based on the presentation, development and knowledge of certain basic concepts, with a very practic based on the use of empirical instruments that allow the analysis of different real and practical cases under differe
More precisely, we describe this double typology of the methodology below.
In the theoretical sessions the master class design will be combined with the active participation of the student in class (questions raised by the teacher and / or classmates, resolution of brief questions raised by the teacher, gr discussion of the aspects that have attracted more interest and even small proofs of review). The aim is for the stu develop both their ability to work independently, their ability to defend ideas and their ability to communicate orally and in writing (raising doubts about the topic in public and / or resolving in writing the issues that have been addres
A good follow-up of the theoretical classes will require the student to prepare in advance the readings that serve as for the theoretical explanation, as well as the main doubts that arise from said readings. In this context, the student a basic bibliography recommended according to the level of the course, as well as certain complementary readings him to follow without problems the different contents of the course. Likewise, you will have access to certain additi material (transparencies, theoretical problems, solved exercises and practical cases) in the virtual classroom of the
The practical classes will follow diverse strategies, based on the resolution of problems and practical cases (real / using, in its case, for it some computer software. These practical cases will be designed so that the student applies and skills acquired in the theory class to real / fictitious data, so that they complete their training process in the kn analytical instrument with its subsequent application to the development of econometric models. It will also be ass the active participation of the student in class and the exercises done prior to the classes, as well as the public exhi if it were the case and it was deemed appropriate by the teacher to accompany the written format of it with an oral

# EVALUATION

This course will use the following evaluation procedure:

- Final exam (70% of the final mark): Written exam (exam) with theoretical and/or theoretical-practical questions and/or problems.

- Continuous assessment of the student based on the resolution of exercises and the preparation of assignments (30% of the final mark). This assessment will consist of the completion and presentation of both analytical and computer exercises for each subject, which will be linked to the student's participation in the practical classes, as well as the delivery of any other work that the instructor deems appropriate to carry out throughout the semester. This continuous assessment is not recoverable, although the grade may be kept until the second sitting in the event that the student does not pass the final exam in the first sitting.

The final mark will be the weighted sum of the final exam and the continuous assessment (not recoverable). In order to add up the continuous assessment, it is essential to pass the exam.
In the event of failing the final exam, the mark that will appear in the official lists will be the mark obtained in that exam (calculated out of 10).

Students suspected of attempted copying, plagiarism or impersonation in the delivery of assignments or the exam will receive a final mark of zero.

The official regulations of the centre regarding the evaluation and grading of subjects can be consulted at the following link:

https://www.uv.es/graus/normatives/2017_108_Reglament_avaluacio_qualificacio.pdf

## REFERENCES


- Carter Hill, R.; Griffiths, W. E. & Lim G.C. (2012): Principles of Econometrics. Fourth Edition. John Wiley & Sons. Inc.
- Contreras,D. y Belaire,J. (2000): Introducció a l'Econometria. Educació. Materials 36. Universitat de València.
- Gujarati, D. y Porter D.C. (2010) Econometría (5ª Edición). McGraw-Hill.
  English version: Gujarati, D. and Porter D.C. (2009) Basic Econometrics, (5th Edition). McGraw-Hill
- Stock J.H. y Watson M.M. (2012) Introducción a la Econometría. (3ª Edition). Pearson
  English version: Stock J.H. y Watson M.M. (2020) Introduction to Econometrics. (4th Edition, Global Edition). Pearson.
- Wooldridge, J (2016). Introducción a la econometría. 5ª Edición. Cengage Learning. English version: Wooldridge, J (2020). Introductory Econometrics: A Modern Approach7th Edition. Cengage Learning


Online resources. Free Access:
https://www.uv.es/uriel/manual/Introducci%C3%B3n%20a%20la%20econometr%C3%ADa%2012-09-2019%20B.pdf