

27522 - Econometric Analysis

Información del Plan Docente

Academic Year	2017/18
Faculty / School	109 - Facultad de Economía y Empresa
Degree	449 - Degree in Finance and Accounting
ECTS	6.0
Year	3
Semester	First semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The evaluation method of the course is global. In the first call, the evaluation consists of three exams.

The first exam will take place after Theme 2. It will be a written type test with question related to Themes 1 and 2. The score of the first exam is 0-10. Let us call the mark of this exam P11.

The second will take place after Theme 4. This exam will consist of an application related to Themes 3 and 4; the student

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will solve the exam in the computers room. The score of the second exam is 0-10. Let us call the mark of this exam as P21.

Then, the weighted average of the first two exams will be obtained as: $P1=0.7*(0.4*P11+0.6*P21)$. The score corresponding to the weighted average P1 is 0-7.

The third will take place the day designated by Faculty in the 'calendar of exams for the first semester'. This exam will combine an application, with GRETL, and a brief collection of theoretical questions. The exam will be divided in two parts. The first is devoted to Themes 1 to 4 and the second to Theme 5. 7 points are assigned to the first part and 3 to the second. The student will decide if he/she does parts 1 and 2 of the exam (in which case he/she will receive a qualification, P, in a score 0-10) or only part 2 (in which case he/she will receive a qualification, P2, in a score 0-3).

The final qualification for the student that decided to do only part 2 (Theme 5), will be obtained as: $P=P1+P2$. The student that decides to do the two parts will receive the corresponding qualification P. In both cases, the score of the qualifications will be in a scale 0-10. To pass the course, a final qualification equal or greater than 5 will be needed.

In the second call, the evaluation will be global. It will take place the day designated by Faculty in the 'calendar of exams for the first semester'. This exam will combine an application, with GRETL, and a brief collection of theoretical questions. The exam will be divided in two parts. The first, devoted to Themes 1 to 4, amounts to 70% of the final qualification whereas the second, devoted to Theme 5, amounts to 30%. The score for the qualification is 0-10, and a final qualification equal or greater than 5 will also be needed to pass the course.

5. Methodology, learning tasks, syllabus and resources

5.1. Methodological overview

The course consists of 150 hours distributed in 60 teaching hours plus 90 non teaching hours. 45 of the 60 teaching hours have a theoretical content whereas the others 15 have a practical orientation. The program of Econometrics consists of 5 themes. Theme 1 has 8 teaching hours assigned, 12 hours are for Theme 2, 10 for the case of Themes 3 and 4 while Theme 5 is assigned with 20 teaching hours.

5.2. Learning tasks

The items scheduled for the course are the followings:

1- Classes on theory and methods: they amount 75% of the course. Each week professors of the course will present formally part of the content of the program; it is part of the responsibility of the student consolidating and extend the discussion using the references and additional material, prepared for that effect. Attendance is highly recommended; the student should ask for assistance as necessary. The material for the course has been prepared well in advance by the professors and it is freely available.

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2- Applied sessions, to be done in computer rooms. The aim is that the student should be able to manage large volumes of information, which is a key aspect in finances. Moreover, it is important for the student to know the software most popular in the field of Econometrics. During these sessions, the student will solve different study cases, taken from the field of finances. Professors will guide during the learning process.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other learning resources such databases and study cases. Further information regarding the course will be provided on the first day of class.

5.3.Syllabus

THEME 1. Introduction

- 1.1 The nature of Econometrics.
- 1.2 Type of data. Coding of qualitative data.
- 1.3 Financial data and Econometrics for Finances.
- 1.4 Time Series and Time. Basic concepts.
- 1.5 Specifying an econometric model: an overview.

THEME 2 Introduction to univariate time series models

- 2.1 Notation and basic concepts. Correlation and Partial correlation.
- 2.2 Study cases.
- 2.3 Autoregressive processes (AR).
- 2.4 Moving average processes (MA).
- 2.5 ARIMA processes.

THEME 3. The Box-Jenkins approach: Specifying an ARIMA model.

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3.1 Identification and estimation.

3.2 Testing.

3.3 Forecasting.

THEME 4. Volatility and measures of risk.

4.1 Motivation. Value-at-Risk models

4.2 Econometric approaches to volatility. ARCH and GARCH models.

THEME 5. The classical linear regression model (MRLC)

5.1 Basic notation. Regression vs correlation.

5.2 Specification

5.3 Estimation.

5.4 Diagnostics

5.5 Forecasting..

5.6 Study cases

5.4.Course planning and calendar

The workload of the course is 150 working hours for the student (6 ECTS credits) divided in 60 teaching hours and 90 nonteaching hours. 75% of the teaching hours is devoted to methods and theory; the other 25% will be held in the computer rooms with an applied content. Each theme in the program is assigned with the teaching load, in terms of working time, that appears in the next two tables.

Table 1. Distribution of teaching hours (ECTS) for the course Econometric Analysis, FICO.

	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Total

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Theory & Methods	6	10	7	7	15	45
Practice & Cases of study	2	2	3	3	2	15
Total Teaching hours	8	12	10	10	20	60

Table 2. Non teaching activities, measured in hours (ECTS) for the course Econometric Analysis, FICO.

	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Total
Tutoring	1	4	3	2	7	17
Personal reflection	4	8	6	6	12	36
Individual work	5	8	6	46	12	37
Work in groups	-	-	-	-		-
Total. Non teaching hours	10	20	15	14	31	90

5.5. Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- [BB] Brooks, Chris. Introductory econometrics for finance / Chris Brooks . - 3rd ed. Cambridge : Cambridge University Press, 2014
- [BB] Greene, William H.. Análisis econométrico / William H. Greene . 3ª ed., reimp. Madrid [etc.] : Prentice-Hall, 2008
- [BB] Gujarati, Damodar N.. Econometría / Damodar N. Gujarati, Dawn C. Porter ; revisión técnica Aurora Monroy Alarcón, José Héctor Cortés Fregoso . - 5ª ed. México [etc.] : McGraw-Hill, cop. 2010
- [BB] Población García, Francisco Javier. Finanzas cuantitativas básicas Javier Población García, Gregorio Serna Calvo . Madrid Paraninfo-Universidad D.L. 2015

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- [BB] Wooldridge, Jeffrey M.. Introducción a la econometría : un enfoque moderno / Jeffrey M. Wooldridge ; traducción, Arielle Beyaert Stevens... [et al.] ; revisión técnica, Arielle Beyaert Stevens . - 2ª ed., 3ª reimp. [Madrid] : Paraninfo, cop. 2008
- [BC] Aznar Grasa, Antonio. Métodos de predicción en economía. Vol. 2, Análisis de series temporales / Antonio Aznar y Francisco Javier Trivez . - [1a. ed.] Barcelona : Ariel, 1993
- [BC] Aznar Grasa, Antonio. Métodos de predicción en economía. Vol.1, Fundamentos, input-output, modelos econométricos y métodos no paramétricos de series temporales / Antonio Aznar y Francisco Javier Trivez . - [1a. ed.] Barcelona : Ariel, 1993
- [BC] Peña Sánchez de Rivera, Daniel. Análisis de series temporales / Daniel Peña Madrid : Alianza, D.L. 2010
- [BC] Trivez Bielsa, Francisco Javier. Introducción a la econometría / Francisco Javier Trivez Bielsa Madrid : Pirámide, D.L. 2010