27522 - Econometric Analysis

Academic Year	2016/17
Academic center	109 - Facultad de Economía y Empresa
Degree	449 - Degree in Finance and Accounting
ECTS	6.0
Course	3
Period	First semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

This course consist of 150 hours distributed in 60 teaching hours plus 90 non teaching hours. 45 of the 60 teaching hours have a theoretical contents whereas the others 15 have a practical orientation. The program of Econometrics consists of 6 themes. Themes 1 and 4 have assigned 8 teaching hours each, 12 hours are for themes 2 and 5 and 10 hours for themes 3 and 6.Learning activities (program included).

5.2.Learning activities

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.

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.

5.3.Program

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.

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 Study cases.

5.3 Basic hyphoteses of the MRLC.

5.4 Estimation and properties of the estimators.

5.5 Testing the MRLC.

5.6 Forecasting.

THEME 6. Diagnostic measures of the MRLC

6.1 Introduction.

6.2 Study cases.

6.3 Constant variance. Remedies.

6.4 No correlation. Remedies.

6.5 Normality.

6.6 Linearity. Remedies.

6.7 Tests for structural break.

6.8 Multicollinearity.

5.4.Planning and scheduling

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	Theme 6	Total
Theory & Methods	6	10	7	6	9	7	**45**
Practice & Cases of study	2	2	3	2	3	3	**15**
Total Teaching hours	**8**	**12**	**10**	**8**	**12**	**10**	**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	Theme 6	Total
Tutoring	1	4	3	2	4	3	**17**
Personal reflection	4	8	6	4	8	6	**36**

Individual work	5	8	6	4	8	6	37
Work in groups	-	-	-	-			-
Total. Non teaching hours	10	20	15	10	20	15	90

5.5.Bibliography and recomended resources

Updated bibliography is available through the website of the library: http://psfunizar7.unizar.es/br13/eBuscar.php?tipo=a