Universidad Zaragoza

Year : 2019/20

27522 - Econometric Analysis

Syllabus Information

Academic Year: 2019/20
Subject: 27522 - Econometric Analysis
Faculty / School: 109 -

Degree: 449 - Degree in Finance and Accounting

ECTS: 6.0
Year: 3
Semester: First semester
Subject Type: Compulsory
Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

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

The evaluation method in Econometric Analysis is global. **In the first call**, the evaluation consists of three exams.

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

- The second will take place after Theme 4. The exam will consist of an application, solved using a computer, plus some questions related to the content of these two themes. 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 is obtained as: P1=0.7*(0.4*P11+0.6*P21). The score corresponding to the weighted average P1 is 0-7. P1 is the qualification obtained in the first part of the course.

The students with an average qualification of 3.5 or higher, pass this part. The students with an average qualification between 2.8 and 3.5 do not pass but can compensate this part of the course with the result obtained in the exam corresponding to Theme 5. The students with an average qualification lower than 2.8 failed this part and should take the content of the full course in the third exam.

- The third exam will take place the date designated by the Faculty. This exam will combine an application, using computers, and a collection of theoretical or practical 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 students which passed the first part of the course, but wanted to improve their qualifications, can take the exam for the whole course.

- The final mark for the student that does only the part corresponding to Theme 5 in the third exam, will be obtained as: P=P1+P2. The student that does 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 date designated by the Faculty in the calendar of evaluations. This exam will combine an application, using computers, and a collection of theoretical or practical 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, to pass the course, a final qualification equal or greater than 5 will be needed.

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, autonomous work, study and assessment tasks.

4.2.Learning tasks

The course includes the following learning tasks:

- Lectures on theory and econometric methods: they amount 75% of the course. (45 hours). These lectures will be taken every week and the professors in the course will present and discuss formally the content of the program. It is responsibility of the student consolidate 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, previously, by the professors in the course and it is freely available.
- Practice sessions (15 hours). They have to be done in computer rooms, there are aimed to train the students in managing large volumes of information, a key aspect in finance. Moreover, it is important for the students to know some of the software most popular in the field of Econometrics. During these sessions, the student will solve different study cases, taken from the field of finance. Professors will guide the student during the learning process

Lecture and classroom materials will be available via Moodle. These include a repository of the lecture notes used during the classes, 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 the course.

4.3.Syllabus

The course of Econometric Analysis consists of 150 hours distributed in 60 teaching hours plus 90 non teaching hours. The course of Econometric Analysis consists of 5 Topics. Topic 1 has 4 teaching hours assigned, 12 hours are for Topics 2 to 4 while Topic 5 is assigned with 20 teaching hours. The course includes the following topics:

Topic 1. Econometrics and financial Econometrics. Basic Concepts

1.1. Definition of Econometrics.

1.2. Type of data. Coding for qualitative data.

1.3. Financial data. Financial econometrics.

1.4. Econometric models. Basic elements.

Topic 2. Introduction to univariate time series models

2.1. Introduction.

2.2. A non-parametric approach. Main instruments.

2.3. A parametric approach. Basic elements: Estationarity, Correlation and Partial Correlation.

2.4. A parametric approach. ARMA models.

2.5. A parametric approach. ARIMA models.

Topic 3. ARIMA models: the Box-Jenkins approach

3.1. Identification and Estimation.

3.2. Testing.

3.3. Forecasting.

Topic 4. Volatility and measures of risk

4.1 Motivation.

4.2. Measures of volatility. Value-at-Risk Models.

4.3. Econometric approach to volatility: ARCH and GARCH models.

Topic 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.

4.4.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 non teaching hours. 75% of the teaching hours is devoted to methods and theory; the other 25% will be held in computer rooms, with an applied content. Each theme in the program is assigned with the following workload:

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

	Theme 1	**Theme 2**	**Theme 3**	**Theme 4**	**Theme 5**	**Total**
Theory & Methods	2	10	9	9	15	**45**
Practice & Cases of study	2	2	3	3	2	**15**
Total Teaching hours	**4**	**12**	**12**	**12**	**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**
Autonomous work	5	8	6	46	12	**37**
Work in groups	-	-	-	-		**-**
Total. Non teaching hours	**10**	**20**	**15**	**14**	**31**	**90**

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the Faculty of Economics and Business website (https://econz.unizar.es/)

4.5.Bibliography and recommended resources