Academic Year/course: 2021/22

27522 - Econometric Analysis

Syllabus Information

Academic Year: 2021/22
Subject: 27522 - Análisis econométrico
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

2. 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 two exams.

- The first exam will take place after Theme 3, with a mixed composition. Part of this exam will consist in a practical application of the content of Themes 2 and 3, using computers. The application will be marked in a range 0-10; let us call its results as $P21$. This first exam will be completed with a part devoted to the theoretical content of Themes 1 to 3, that will be marked also in a range 0-10; let us call its result as $P11$. Then the score of the first exam will be obtained as the weighted average of $P11$ and $P21$ as $P1=0.4*P11+0.6*P21$, also in a 0-10 range.

The students with a weighted qualification of 5 or higher, pass the first exam. The students with a weighted qualification between 4 and 5 do not pass but can compensate the first exam with the result obtained in the exam corresponding to Themes 4 and 5. The students with a weighted qualification lower than 4 should take the content of the full course in the second exam.

-The second exam will take place the date designated by the Faculty. This exam will combine an application, using computer, and a collection of theoretical and/or practical questions. The exam will be divided into two parts. The first part, which accounts for 60% of the qualification, will be devoted to Themes 1 to 3 whereas the second to Themes 4 and 5, accounting for the other 40% of the qualification. 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 $P2$, also in a score 0-10). The students who 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 Themes 4 and 5 in the second exam, will be obtained as: $P=0.6*P1+0.4*P2$. 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 into two parts. The first, devoted to Themes 1 to 3, amounts to 60% of the final qualification whereas the second, devoted to Themes 4 and 5, amounts to 40%. The score for the qualification is 0-10 and, to pass the course, a final qualification equal or greater than 5 will be needed. Students who are in a position to release or compensate a Themes 1 to 3 of the subject, will be able to opt for doing only Themes 4 and 5.

In all the cases, precision and exhaustiveness of the answers will be valued as well as the student's expository capacity.

These tests are expected to be carried out in person but if the health circumstances require it, they will be carried out online. In the case of online assessment, it is important to note that, in any test, the student may be recorded, and he or she may exercise his or her rights by the procedure indicated in:

If needed, the necessary software will be used to check the originality of the activities carried out. The detection of plagiarism or copying in an activity will imply the rating of 0 points.

For the evaluation of the fifth and sixth year students, we consider the agreement of the University Governing Council of 22 December 2010, which approves the Regulation of Learning Evaluation Rules. This article establishes that the student will carry out the evaluation before a court, although he may choose to take the exam together with the rest of his classmates and then deliver the exam to be corrected by the court.

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.

The teaching delivery methodology is expected to pivot around face-to-face classes. However, if necessary for health reasons, face-to-face classes may be taught online.

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/)