Universidad Zaragoza

Academic Year/course: 2023/24

27429 - Econometrics III

Syllabus Information

Academic year: 2023/24
Subject: 27429 - Econometrics III
Faculty / School: 109 - Facultad de Economía y Empresa
Degree: 417 - Degree in Economics
ECTS: 6.0
Year: 4
Semester: First semester
Subject type: Compulsory
Module:

1. General information

Goals:

1. To consolidate the training acquired in previous Econometrics subjects.
2. To complete this training with new instruments.
3. To provide a conceptual framework for applied work.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (https://www.un.org/sustainabledevelopment/es/), so that the acquisition of the subject's learning results provides training and competency to contribute to some extent to their achievement

Objective 4: Ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all.

Target 4.1: Quality education for all students that allows upward socioeconomic mobility for all of them.

Goal 8: Promote Inclusive and Sustainable Economic Growth, Employment and Decent Work for All

Objective 8.1: Drive progress, create decent jobs for all and improve living standards.

2. Learning results

The student, in order to pass this subject, must demonstrate the following results...

The main objective of the subject is that, at the end of the term, the student masters the econometric techniques that appear in the syllabus of Econometrics I, Econometrics II and Econometrics III and, in addition, has a global perspective on the steps to follow when carrying out an applied work.

The student, in order to pass the subject, must demonstrate:

- To be able to transform economic hypotheses into econometric models and apply the four basic stages of the econometric method.
- To know how to collect data from different sources and transform them to be used in econometric analysis. To apply the appropriate econometric techniques that, with the help of an econometric program such as
- Gretl, help the student to solve problems of interest.
- To know how to analyse the characteristics of the variables under study in order to adequately specify the models.
- To know how to test different economic hypotheses.
- To know the fundamental principles to discriminate between econometric models.

The subject seeks to reinforce certain specific *skills* in the students. Specifically, it is intended to awaken and enhance the following attitudes:

- The importance of empirical contrast in assessing the quality of explanations of the economy.
- The relevance of quantifying economic relationships in order to predict and carry out a structural analysis
- Rigorous application of econometric techniques appropriate to each situation.
- To maximize the quality of the presentation of the results, providing all relevant information, organizing the work well and using a clear and understandable text.

3. Syllabus

Unit 1. Validation and Selection of Econometric Models.

- Review of compliance with the hypotheses.
- GCM estimators.
- Criteria for selection.

Unit 2: Stochastic regressors.

- Stochastic Regressors
- Consistent Estimation in the presence of Stochastic Regressors
- Exogeneity Contrasts

Unit 3. Dynamic models.

- Dynamic Models, Specification and Estimation
- Interpretation of ARDL(p,s) model parameters
- Models with Expectations

Unit 4. Simultaneous Equation Models.

- Structural, Reduced and Final Form of a SEM
- Identification of a SEM
- Methods of Estimating a SEM

Unit 5. VAR models.

- Specification and Estimation of a VAR Model
- Specification Contrasts
- Impulse Response Function
- Variance Decomposition

Unit 6. Models with non-stationary variables.

- Order of Integration. Contrasts
- Cointegration in unequational models
- Johansen's Cointegration Contrast

4. Academic activities

The syllabus of the Econometrics III subject includes:

Theoretical classes: They will be used to present the fundamental concepts of the subject, conveniently structured in topics 28 hours

Theoretical and practical classes: The faculty prepares and solves a collection of problems and theoretical-practical questions related to the content of the subject. 10 hours

Practical computer classes: This activity will take place in the computer classrooms. The objective is to help the student understand the theoretical contents and put the knowledge into practice. 18hours **Tutorials**: Individualized attention to students aimed at resolving doubts.

Personal Study: 90 hours

Evaluation Tests: 4 hours

In principle, the teaching methodology and its evaluation is planned to be based on face-to-face classes . However, if circumstances so require, they may be carried out online.

5. Assessment system

In the FIRST CALL the evaluation will have two options: through continuous assessment or through the global exam of the subject.

In the continuous evaluation option, two theoretical, theoretical-practical and computer tests must be taken. The first test will be weighted at 50% of the final grade. The first test will take place at the end of topic 3 and will include topics 1 to 3; while the second test will be at the end of the four-month period for the remaining topics and will be weighted at 50% and will also consist of a theoretical part, a theoretical-practical part and a computer part.

The second option will consist of a global exam in which theoretical and/or theoretical-practical questions will be asked on the contents of the program and a computer-based part. Students who have obtained a grade equal to or higher than 5 in any of the first two tests of the continuous evaluation but have not passed this evaluation, may release that part of the subject in the global examination of the first call. Any student who has passed the continuous evaluation can opt to take the global exam to improve the grade.

The SECOND CALL will be evaluated through a single exam for all students, with the same type of questions as the global exam of the first call.

All tests will be graded on a scale of 0 to 10. The subject is passed if the weighted average grade or the grade of the global exam is equal to or higher than 5.

It is foreseen that these tests will be carried out in person, but if health circumstances require it, they will be carried out in a blended or online manner . In the case of online evaluation, it is important to note that, in any test, the student may be recorded, and may exercise his/her rights through the procedure indicated in: https://protecciondatos.unizar.es/sites/protecciondatos.unizar.es/files/users/lopd/gdocencia_reducida.pdf