Academic Year/course: 2023/24

27443 - Applied Econometrics

Syllabus Information

Academic year: 2023/24
Subject: 27443 - Applied Econometrics
Faculty / School: 109 - Facultad de Economía y Empresa
Degree: 417 - Degree in Economics
ECTS: 3.0
Year: 4
Semester: First semester
Subject type: Optional
Module:

1. General information

The main objective of the subject is to deal from an applied perspective with a series of problems that arise in econometric practice, such as some issues related to the specification, estimation and interpretation of models: models with discrete dependent variable, models with time series data and models with panel data . The previous knowledge and other new issues will be fixed with the elaboration of some practical cases that will be solved with the help of the computer and then will have to be presented publicly.

These approaches and goals are aligned with the Sustainable Development United Nations (https://www.un.org/sustainabledevelopment/es/), in particular, the activities planned in the subject will contribute to the achievement of objectives 4.3, 4.4 and 4.5 of Goal 4 and Goal 8.

2. Learning results

- Know the basic techniques of econometric analysis and adapt them to the field of application of economics.
- Know how to collect data from different sources and transform them to be used in econometric analysis.
- Apply the appropriate econometric techniques that, with the help of an econometric program such as Gretl, will help the student to solve problems of interest in the economic field.
- Know how to test different economic hypotheses through restrictions in the model parameters.
- Know how to introduce dummy variables in econometric models and interpret their estimation.
- Identify common problems that can occur in the error term of an econometric model (autocorrelation, heteroscedasticity and normality) and know how to correct them.
- Estimate and interpret models in which the dependent variable is of discrete type.
- Estimating and interpreting high-frequency time series models, determining the various effects of ARCH type that can be found.
- Know how to write an applied econometric paper in a rigorous and comprehensible way.
- Summarize and group the main ideas of a paper and translate them into a PowerPoint presentation.
- Publicly defend the resolution of the cases that will be presented during the term.

3. Syllabus

PART I. Common problems in econometric estimation. Models with binary dependent variable.
Econometrics topics to be covered in the case studies:

- Estimation of models with problems in the random part, heteroscedasticity and autocorrelation. Case 1.1.
- Estimation of models with discrete dependent variable. Case 1.2.
- Estimation, validation and interpretation of results in all cases.

PART II. Econometric models with high-frequency and panel data.
Econometrics topics to be covered in the case studies:

- Estimation of models with autoregressive conditional heteroscedasticity (ARCH). Case 2.1.
- Estimation, validation and interpretation of results in all cases.

4. Academic activities

Participative master class: sessions with the teacher in which the subject will be explained, 11 hours **Problems and cases:** sessions to solve practical cases presented by the teacher, 8 hours

Evaluated teaching assignments: time dedicated by students to solve evaluable cases, part of it in class with the support of the teacher and part of it individually, 22 hours

Personal study: 25 hours

Evaluation tests: class presentations and written tests are included, 9 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

First call: two assessment systems are offered to the student:

Option 1: Continuous assessment

- Written and oral presentation of the cases proposed by the teacher.
- 90% of the continuous assessment grade is obtained by weighting at 60% the written work presented by students, and at 40% the oral presentation of the same in class. In the assessment of this part, the correct resolution of the questions, the theoretical justification, the correct economic and econometric writing and the public presentation will be taken into account.
- 10% of the continuous assessment grade will be obtained if students individually submit in writing a proposal for a concrete empirical study. In this part, the originality of the proposal and the feasibility of to carry out the work with econometric techniques will be assessed.

Option 2: Global exam

Theoretical and theoretical-practical questions on the contents of the subject and a computer test.

The theoretical part will be graded out of 5 points and the practical computer part will be graded out of 5 points. The subject is passed by obtaining at least 5 points, with a minimum grade of 3 points in each part.

Second call: global exam as described above.