

27429 - Econometrics III

Syllabus Information

Academic Year: 2019/20

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

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)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The teaching method for the subject "Econometrics III" implies the use of different techniques aimed at the achievement of specific objectives.

The part of the subject that deals with more theoretical and methodological issues will be presented in lectures. In these sessions, the teacher will explain the main concepts of the econometric method, stressing economic interpretation and practical uses. To support knowledge in econometric method, we will introduce regular theoretical-practical sessions in which the students, supported by the teacher, will solve small problems or study cases with the purpose of illustrating the use of the instruments previously studied.

To stress the practical dimension of the subject, students will work with different software packages which deal with the search and use of useful statistical information and its treatment for econometric purposes. This work will be regularly distributed throughout the course in sessions specifically aimed at the use of econometric software.

4.2.Learning tasks

The syllabus of "Econometrics III" consists of the following activities:

Theoretical sessions: They make up, approximately, 50% of the teaching activities and they are aimed at presenting the main concepts of the subject, conveniently structured into units. The teacher will formally present the corresponding material, which students have to strengthen and extend using the recommended bibliography. We recommend students to attend lessons, participate, take notes about the teachers' explanations as well as asking about any doubts and further explanations they might need.

Theoretical-practical sessions: The teacher will provide students with a problem collection, as well as theoretical-practical questions related to the subject, well in advance. The main purpose of this material is for students to feel confidence with the use of all the instruments involved in the theoretical perspective of this course.

Practical sessions in the computer lab: This activity will be developed in the computer rooms that the Centre has reserved for the subject. The objective is twofold. On the one hand, we aim at getting students used to managing large amounts of quantitative information, which is a key aspect for their skills. On the other hand, it is important for students to gain confidence in the use of econometric software, at user level. In these sessions, practical cases will be solved by the teacher, who will guide the students' learning process.

Tutorial: The teacher will schedule a tutorial calendar which will be published well in advance, with the objective of solving individual doubts and offering a more direct support to students.

4.3.Syllabus

Unit 1. Structural Change and Model Selection.

- Types of breaks in the models.
- Structural breaks test.
- Selection of models based on information criteria.
- Selection of nested models.
- Selection of unnested models.

Unit 2. Stochastic Regressors.

- Origin of stochastic regressors.
- Consequences of stochastic regressors.
- Solution to stochastic regressors.
- Hausman test.

Unit 3. Econometric Models with Limited Dependent Variable.

- How to estimate models with binary dependent variable.
- Linear probability model.
- Probit and Logit Models.
- Other models with discrete dependent variable.

Unit 4. Dynamic Models.

- Types of dynamic models.
- Impulse-response effects on short-and long-term models.
- Estimation and test of dynamic models.
- Extensions of the ARDL. ARMAX models.

Unit 5. ARCH and GARCH Models.

- Features of the financial series.
- How uncertainty is modeled.

- Estimation and prediction of ARCH models.
- How to measure the effect of the risk premium.
- How to measure the effect of good and bad news.
- A general ARCH model: The APARCH Model.

Unit 6. Simultaneous Equations Models.

- Types and formulation of simultaneous equations.
- The problem of identification.
- Estimation of simultaneous equations.
- Uses and limitations of simultaneous equations.

Unit 7. VAR Models.

- Approach and estimation of VAR models.
- Impulse-response functions.
- Causality contrasts between variables.
- Extensions of stationary VAR models.

Unit 8. Econometric Models with Non-stationary Variables.

- Types of trends in the time series.
- Identification of integrated processes.
- The danger of spurious regression.
- Cointegration and models with error correction.
- Cointegration in VAR models.

Unit 9. Econometric Methodology.

- History and development of econometrics.
- The role of econometrics in the economy.
- Modeling in econometrics.
- How to elaborate a work of applied econometrics.

4.4.Course planning and calendar

The subject of Econometrics III has assigned a total of 150 hours (6 credits ECTS), which are structured into 75 class hours and 75 non-class hours. With respect to the first, 30 will have a theoretical content, 30 will be devoted to practical lessons and the remaining 15 will be tutorials. The distribution of the lessons among the four units of the syllabus will depend on their complexity. In general terms, teachers will adopt the following schedule:

Table 1. Hours in Econometrics III

	T1	T2	T3	T4	T5	T6	T7	T8	T9	Total
Theoretical sessions	2	2	4	4	4	4	2	6	2	30
Blackboard sessions	2	1	1	1	1	2	1	1	0	10
Computer lab sessions	2	2	2	3	3	2	3	3	0	20
Tutorials	1	1	2	2	2	2	2	2	1	15
Total sessions	7	6	9	10	10	10	8	12	3	75

Table 2. Distribution of independent learning in Econometrics III

	T1	T2	T3	T4	T5	T6	T7	T8	T9	Total
Individual study	4	5	4	6	6	6	6	6	2	45
Individual practical work	3	3	4	4	4	4	4	4	0	30

Total hours	7	8	8	10	10	10	10	10	2	75
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4.5. Bibliography and recommended resources