SUBJECT TEACHING GUIDE

G895 - Econometrics

Double Degree in Law and Administration and Business Management
Degree in Business Administration and Management

Academic year 2020-2021

1. IDENTIFYING DATA					
Degree	Double Degree in Law and Administration and Business Management			Type and Year	Compulsory. Year 5 Compulsory. Year 3
Faculty	Faculty of Economics and Business Studies				
Discipline	Subject Area: Econometric Methods Module: Training in Quantitative Methods				
Course unit title and code	G895 - Econometrics				
Number of ECTS credits allocated	6	Term		Semester based (2)	
Web	http://moodle.unican.es				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. ECONOMIA
Name of lecturer	FRANCISCO JAVIER PARRA RODRIGUEZ
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Other lecturers	CRISTINA RUIZ DEL RIO

3.1 LEARNING OUTCOMES
- To understand the methodology and objectives of econometrics.
- Ability to apply matrix algebra , probability and statistical inference in regression analysis with economic data.
- To know the different types of economic data and their statistical properties.
- To know how to interpret, criticize and use regression models.

4. OBJECTIVES
To train students to understand, build and use regression models for decision making in business.

6. COURSE ORGANIZATION	
CONTENTS	
1	Regression analysis I: specification and estimation
1.1	Econometrics: overview. Econometric model. Data and moment matrices. Scalar and matrix notation. Empirical applications.
1.2	Ordinary least squares I: simple linear regression. Scatter plot and linear fit. Residual sum of squares. Normal equations. Intercept and slope estimators. Excel modeling practices.
1.3	Ordinary least squares II: multiple linear regression. Residual sum of squares, normal equations and OLS estimators. Center data regression. Linear regression with centered data. Regression with two predictors. Polynomial regression. Excel modeling practices.
1.4	Ordinary least squares II: matrix approach. Numerical properties. Projection matrices. Goodnes of fit measures and information criteria. Excel modeling practices.
2	Regression analysis II: statistical inference, diagnostic checking and forecasting.
2.1	The classical linear regression model: assumptions. Sampling distribution of the OLS estimator. Statistical properties. Gauss-Markov theorem. The estimator of error variance and its sampling distribution. Introduction to R and RStudio.
2.2	Hypothesis testing: t and F tests. Confidence interval and regions. ANOVA table. The general linear hypothesis. Practices with R/RStudio.
2.3	Diagnostic checking: analysis of residuals (tests for normality, heteroskedasticity, autocorrelation; outliers and influential observations). Multicollinearity. Practices with R/RStudio.
2.4	Uses: point and interval prediction, control. Practice with R/RStudio.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Continuous evaluation exam I (practice with Excel and theoretical-practical questions)	Laboratory evaluation	No	Yes	50,00
Continuous evaluation exam II (practice with R/RStudio and theoretical-practical questions).	Laboratory evaluation	No	Yes	50,00
TOTAL				100,00

Observations

Each of the two continuous assessment exams will be scored from 0 to 10. A minimum grade of 4 is required in each exam to calculate the arithmetic mean of the two grades. Under this requirement, the course is passed with a final grade equal to or greater than 5.

The exams of the ordinary and extraordinary calls will be similar to those of the continuous assessment tests. In each call there will be an exam for block I and another for block II, both with a theoretical-practical part and a practice with Excel and/or R/RStudio.

Students who obtain a grade lower than 4 in a continuous assessment exam will have to recover it by taking the corresponding exam of the ordinary call, doing the theoretical-practical part and the computer practice.

Students who wish to improve their continuous assessment grades may submit to the ordinary call without penalty, keeping the highest grade.

Students who do not pass the subject in the ordinary call will be examined in the extraordinary call of the block in which they have had a grade lower than 4.

As an alternative to the practical part of each test, students who regularly attend theory and practical classes will be able to opt for the delivery and evaluation of the practices that take place weekly in the computer room. To this end, they will have to confirm it in the query that will be enabled in Moodle at the beginning of the course, deliver the files of the practices carried out, pass the tests and / or exercises that are proposed for this purpose. The score will be obtained in this case as the arithmetic mean of the evaluable tests (six in each block).

If the competent health and educational authorities indicate that the evaluation is online, each continuous evaluation or recovery test will be divided into four 30-minute parts that will be carried out sequentially in one or more days.

Observations for part-time students

Since class attendance is recommended, but not compulsory, the evaluation criteria for part-time students are identical to those for full-time students, being able to take continuous assessment exams, as well as the ordinary and extraordinary exams, which allows them to obtain a scoring from 0 to 10.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Hill, R. C., Griffiths, W. E., Lim, G. C. (2018), Principles of Econometrics, 5th ed., Wiley.

Gallego, J.L. (2020) Apuntes de Econometría. Departamento de Economía. Universidad de Cantabria. http://moodle.unican.es/