SUBJECT TEACHING GUIDE

G969 - Statistical Methods in Economics and Business

Degree in Economics

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Degree in Economics			Type and Year	Optional. Year 4
Faculty	Faculty of Economics and Business Studies				
Discipline	Subject Area: Statistical Methods				
Course unit title and code	G969 - Statistical Methods in Economics and Business				
Number of ECTS credits allocated	6	Term		Semester based (1)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. ECONOMIA
Name of lecturer	VANESA JORDA GIL
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Other lecturers	

3.1 LEARNING OUTCOMES
- To translate the reality into statistical language
- To apply different statistical procedures to solve economic problems

4. OBJECTIVES

To learn the theoretical concepts and the basic practices of the statistical inference.

To use specific software to solve problems of statistical inference.
To be able to economically interpret the results of the statistical analysis.

To gain self-autonomy.
To develop teamwork skills.

6. COURSE ORGANIZATION

CONTENTS	
1	Punctual estimation: Introduction to statistical inference – punctual estimation and sampling distribution of estimators. Properties of estimators - unbiased, efficient, consistent and sufficient. Estimation methods - maximum likelihood and method of moments. Estimation of the main discrete and continuous distributions.
2	Confidence interval estimation. Basic concepts and elements of confidence intervals. Confidence intervals for one sample - Confidence intervals for the mean of a normal distribution under different hypothesis. Confidence intervals for the variance of a normal distribution under different hypothesis. Confidence intervals for the proportion. Confidence intervals for two samples – confidence interval for the mean difference of two normal populations under different hypothesis (independent and dependent samples). Confidence intervals for the ratio of the variances. Confidence intervals for the mean difference of proportions. Contrasts of hypothesis – concepts and basic elements.
3	Model Diagnosis I: Introduction to structural hypothesis. Distribution hypothesis. Graphical methods. Goodness-of-fit test based on the Chi-square statistic. Kolmogorov-Smirnov test. Normality tests. Model Diagnosis II: The independence hypothesis. Consequences of dependence. The homogeneity hypothesis. Heterogeneous populations and the Simpsons' paradox. Identification of heterogeneity. Outliers and their consequences.
4	Analysis of variance: one factor, two factors and an interaction term. Non-parametric analysis of variance: Kruskal-Wallis test.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Problem-solving using statistical software	Work	No	Yes	60,00
Final essay	Work	No	Yes	40,00
TOTAL				100,00

Observations

If a student does not pass the course in the February examination session, he/she will be able to resit the exam in the September examination session. This exam will include all the contents of the course unit.

Observations for part-time students

Part-time students take a final exam out of 10 points with all the contents of the course unit. If a student does not pass the course in the February examination session, he/she will be able to resit the exam in the September examination session.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Peña, D. (2001). Fundamentos de Estadística. Alianza Editorial, Madrid.