Statistics, probability and multivariate analysis

Academic Year: (2023 / 2024)

Department assigned to the subject: Economics Department, Statistics Department Coordinating teacher: NOGALES MARTIN, FRANCISCO JAVIER Type: Compulsory ECTS Credits : 6.0 Year : 1 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Basic Statistics and Mathematics

OBJECTIVES

- 1. Capacity for modeling problems derived from data with many variables.
- 2. Apply basic probabilistic models.
- 3. Obtain point estimators for some relevant parameters and estimate the corresponding confidence intervals.
- 4. Manage sampling and asymptotic distributions.
- 5. Perform statistical inference and understand the key concepts in hypothesis testing.
- 6. Handle statistical software: R

DESCRIPTION OF CONTENTS: PROGRAMME

- 1. A review of probability and random variables
- 2. Multivariate random variables
- 3. Sampling Distributions
- 4. Estimation
- 5. Hypothesis tests

ASSESSMENT SYSTEM

Midterm exam (including a practical part) 50%, final exam (including a practical part) 50%, with a minimum grade of 5 points over 10 in each exam.

% end-of-term-examination:	50
% of continuous assessment (assigments, laboratory, practicals):	50

BASIC BIBLIOGRAPHY

- G. Casella and R.L. Berger Statistical Inference, Duxbury, 2002

ADDITIONAL BIBLIOGRAPHY

- James H. Stapleton Models for Probability and Statistical Inference, Wiley, 2008
- James H. Stock, Mark W. Watson Introduction to econometrics, Pearson, 2014

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