uc3m | Universidad Carlos III de Madrid

Data analysis for decision-making

OBJECTIVES

After completing the course, students will be able to choose, use and properly interpret the main statistical techniques for the treatment of business data that support the adoption of informed decisions for the implementation of a business project.

Specific skills:
- Ability to understand, analyze and solve complex problems related to the start-up, expansion and consolidation of a business project, based on a broad knowledge of advanced business management tools.
-Ability to prepare, understand and analyze the accounting and financial information of the company, in order to make informed decisions based on said information, appropriately using the different financing mechanisms that the entrepreneur has to start a business project .
- Ability to critically analyze real business cases and draw relevant conclusions for business practice.
- Ability to understand the fundamentals of entrepreneurial activity, the main determinants of its development and its results

DESCRIPTION OF CONTENTS: PROGRAMME

Introduction to statistical inference
The Multiple Regression Model: Least Squares Estimation
Models for discrete response variables: logit and probit models
Introduction to multivariate statistics: cluster analysis

LEARNING ACTIVITIES AND METHODOLOGY

Face-to-face activities

a) Theoretical classes:
Methodology: Lectures with computer and audiovisual support, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.

b) Practical classes in the computer room:
Methodology: Classes in which the students will use statistical software to carry out quantitative analysis from the business data sets provided and the obtaining and discussion of results and their implications for decision-making

c) Tutorials:
Methodology: Individualized monitoring and supervision by the teacher of the work entrusted to the students, as well as the practices carried out in the computer room, and resolution of doubts and questions.

Student's personal work

a) Practical exercises:
Methodology: Carrying out exercises, with the support of statistical software, in which students will have to analyze and interpret the results obtained for the data sets provided to them using the knowledge acquired in the matter.

c) Study:
Methodology: Autonomous work of the students.

ASSESSMENT SYSTEM

% end-of-term-examination/test:	40
% of continuous assessment (assigments, laboratory, practicals…):	60

Two elements of student evaluation are established, aimed at verifying the acquisition of the aforementioned competencies:
Practical exercises (60%)
Exam based on a real data processing exercise (40%)

BASIC BIBLIOGRAPHY

- McClave, J.T., Benson, P.G., Sincich, T. Statistics for Business and Economics (12ª edición), Pearson, 2012

- Peña, D. Fundamentos de Estadística, Alianza Editorial, 2008

- Pérez C. Técnicas Estadísticas Multivariantes con SPSS, Garceta, 2009