

Academic Year: (2020 / 2021)

Review date: 22-06-2020

Department assigned to the subject: Department of Statistics

Coordinating teacher: VELILLA CERDAN, SANTIAGO

Type: Electives ECTS Credits : 6.0

Year : Semester :

STUDENTS ARE EXPECTED TO HAVE COMPLETED

Sequences:

Statistics I-II

Mathematics for Economics I-II

In general: Fundamentals of Statistics, Linear Algebra, and Calculus. Some acquaintanceship with Microsoft Excel is also advisable.

COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

Advanced techniques of Microsoft Excel

DESCRIPTION OF CONTENTS: PROGRAMME

The purpose of the course is to present an advanced revision of Business Analytics techniques, based on the intensive use of Microsoft Excel

1. Introduction to BUSINESS ANALYTICS

- ** 1.1 Examples of Business Data
- ** 1.2 Numerical and graphical tasks
- ** 1.3 Business Analytics and Microsoft Excel

2. FUNDAMENTALS of Software

- ** 2.1 Introduction to Excel
- ** 2.2 Keyboard shortcuts and screen operators
- ** 2.3 Ranges in Excel
- ** 2.4 Excel functions and expressions
- ** 2.5 Tables and Pivot Tables
- ** 2.6 Filtering and Sorting
- ** 2.7 Charts with Excel
- ** 2.8 Dashboards
- ** 2.9 Conditional formatting
- ** 2.10 Importing text data into Excel
- ** 2.11 Importing data from the Internet
- ** 2.12 Matrices with Excel
- ** 2.13 Excel Add-Ins
- ** 2.14 Printing an Excel Workbook

3. REVIEW of elements of Statistics

- ** 3.1 Excel functions for exploratory data analysis
- ** 3.2 Stacked and unstacked data layouts
- ** 3.3 Histograms and Box-Plots with Excel
- ** 3.4. Multidimensional data
- ** 3.5 The data matrix
- ** 3.6 Different types of data
- ** 3.7 Mean vector. Covariance and correlation matrices
- ** 3.8 Centering and standardizing
- ** 3.9 Data reduction

** 3.10 The normal distribution. Distribution tables. Applications with Excel

4. SIMULATION techniques.

** 4.1 Basic simulation methods with Excel

** 4.2 Generation of univariate and multivariate normal data with Excel

** 4.3 Applications and examples with Excel

5. CASE analysis

** 5.1 Examples of real data applications in Business, Economics, Finance, and Marketing with Excel.

LEARNING ACTIVITIES AND METHODOLOGY

Competences will be acquired by students from:

[I] Theory classes: one per week (14 sessions) [online synchronous]

[II] Practical classes in the computer room: one per week (14 sessions) [face-to-face]

Activities [I] and [II] will be devoted to exercises, problems, data examples, and case studies. Teaching will make intensive use of the resources available in Aula Global. In face-to-face teaching, leading operating system is Microsoft Excel 2016 for Windows. Online sessions in turn will use Microsoft Excel 365, that the University makes available to the students for free. Online sessions will be recorded.

ASSESSMENT SYSTEM

Continuous evaluation: 75%

This will consist in one exam online (25%) and the completion of some software practices, with a collection of computer and data analysis activities (50%). Attendance to class will be taken into account in the grading process.

Final exam: 25%

Further details can be however discussed at the beginning and end of the course, in order to reach a common agreement between instructor and students.

% end-of-term-examination: 25

% of continuous assessment (assignments, laboratory, practicals...): 75

BASIC BIBLIOGRAPHY

- ALBRIGHT, S. C. and WINSTON, W. L. Business Analytics: Data Analysis & Decision Making, 6th Edition, Cengage Learning, 2017

- WINSTON, W. L. Microsoft Excel 2016: Data Analysis and Business Modeling, Microsoft Press, 2016

ADDITIONAL BIBLIOGRAPHY

- ANDERSON, D. R., SWEENEY, D. J. and WILLIAMS, T. A. Essentials of Modern Business Statistics with Microsoft Excel, 6th Edition, Cengage Learning, 2016

- JOHNSON, R. A. and WICHERN, D. W. Applied Multivariate Statistical Analysis, 6th Edition, Prentice Hall, 2007