

Academic Year: ( 2020 / 2021 )

Review date: 10-09-2020

Department assigned to the subject: Transversal matters

Coordinating teacher: ALVAREZ RODRIGUEZ, JOSE MARIA

Type: Compulsory ECTS Credits : 3.0

Year : 3 Semester :

**REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)**

- Experience in the use of computers will be valuable.
- Experience in the use of Office applications will be valuable.
- Experience in the use of spreadsheets tools will be valuable.

**OBJECTIVES**

- a) Be able to manage datasets, tables and pivot tables to filter, sort and summarize data.
- b) Be able to perform data analysis processes to make predictions and simulations.
- c) Be able to manage a worksheet as a database making use of the proper functions to perform queries, filter, etc.
- d) Be able to manage the audit, debug and trace capabilities of a spreadsheet tool.
- e) Know, understand and apply functions to create logical expressions to filter data and to make decisions.
- f) Know, understand and apply functions to manage text-based resources.
- g) Know, understand and apply functions to generate descriptive statistics from data.
- h) Know, understand and apply functions in the area of social sciences.
- i) Know, understand and create different types of charts.
- j) Know, understand, create and customize different types of charts.
- k) Be able to manage and customize a spreadsheet for printing and data publishing.
- l) Be able to create dashboards using different elements.
- l) Be able to automate tasks: use of macros.

**DESCRIPTION OF CONTENTS: PROGRAMME**

Teaching Unit 1: A first contact

- 1.1-Structure of a spreadsheet: book, sheets and cells.and basic operations
- 1.2-Working with cells and sheets, data import and references.
- 1.3-Task automation for this unit

Teaching unit TU2: Building, understanding and exploiting data.

- 2.1-Formula and functions
  - Boolean operators and functions
  - Text
  - Database
  - Descriptive statistics
- 2.2-Tables and pivot tables
- 2.3-Data analysis
- 2.4-Task automation for this unit

Teaching unit TU3: Representation of data and information, task automation and applications

- 3.1-Visualization (pivot charts)
- 3.2-Spreadsheet applications: forms, mail merge, printing, document generation, etc.

### 3.3-Task automation for this unit

#### LEARNING ACTIVITIES AND METHODOLOGY

##### Requirements:

- Excel 2013 or higher (Office 365 provided by the University would be recommended). Spanish or English language version, depending on the language of the enrollment group.
- To do exercises, a personal computer can be used or you can also connect to the virtual classroom service provided by UC3M.

##### LEARNING ACTIVITIES

###### Theoretical Lectures:

- Show foundations and main concepts

###### Practical Lectures:

- Exercise resolution
- General tutoring

###### Team Work:

- Final case development
- Exercises

###### Individual Work:

- Exercises
- Contribution to team project
- Study and preparation of final exam

#### ASSESSMENT SYSTEM

<b>% end-of-term-examination:</b>	0
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	100

##### CONTINUOUS EVALUATION (100%)

- Final case development (including a partial delivery): 40%
- 1 minute quizz: 10%
- Final exam: 50%

A minimum grade of 5.0 both in the final case development and in the final examination is required to pass the course.

##### Final case development:

- Development of a case to cover the life-cycle of a data analysis process for this degree: data loading, analysis, visualization and document generation.

#### BASIC BIBLIOGRAPHY

- Conrad Carlberg Predictive Analytics: Microsoft Excel, Que Publishing, 2012
- John Walkenbach Excel 2016 Bible, Willey, 2016
- Matthew MacDonald. Excel 2010: The Missing Manual. , O'Reilly., 2010

#### ADDITIONAL BIBLIOGRAPHY

- Cole Nussbaumer Knaflic Storytelling with Data: A Data Visualization Guide for Business Professionals, Willey, 2015
- Jordan Goldmeier Advanced Excel Essentials, APress, 2014

