Advanced Knowledge of Spreadsheets

Academic Year: (2020 / 2021) **Review date: 10-09-2020**

Department assigned to the subject: Transversal matters

Coordinating teacher: ALVAREZ RODRIGUEZ, JOSE MARIA

Type: Basic Core ECTS Credits : 3.0

Year : 3 Semester : 1

Branch of knowledge: Social Sciences and Law

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 vill 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.
i) Know, understand, create and customize different types of charts.
j) Be able to manage and customize a spreadsheet for printing and data publishing.
k) 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

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.

% end-of-term-examination:	0
% of continuous assessment (assigments, laboratory, practicals…):	100

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
- Jordan Goldmeier Dashboards for Excel, APress, 2015