

## Data Science

Academic Year: ( 2024 / 2025 )

Review date: 11-05-2024

Department assigned to the subject: Library and Information Sciences Department

Coordinating teacher: PANDIELLA DOMINIQUE, ANDRES

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

## DESCRIPTION OF CONTENTS: PROGRAMME

This course will introduce you to Data Science, its concept, applications, and future perspectives in the Social Sciences.

In a globalized, ever-changing, increasingly accelerated and complex world, having professionals who are able to collect, analyze, and interpret the vast amount of existing heterogeneous data (Big Data) is absolutely crucial for decision making in the business, social, economic, and political areas. Data Science has been labeled 'the sexiest job of the 21st century' (Harvard Business Review, 2012), and in fact there is a growing demand of professionals trained in this discipline.

In this course, students will approach the management and analysis of different types of data -including those from surveys, web-based and social media, business data, and research data, among others- by means of the latest techniques and tools for statistical learning.

Contents:

1. Foundations of Data Science: concept, theories, and approaches.
2. Preliminary analysis/preparation of data: how to collect, clean, treat and combine data from different sources.
3. Data visualization: best practices in large data visualization and communication.
4. Predictive tools: applications of the main tools for statistical learning, regression and classification.

## LEARNING ACTIVITIES AND METHODOLOGY

Theoretical knowledge acquisition (3 ECTS), through lectures, teaching materials prepared by the instructor, online tutorials, readings, and students' individual study.

Acquisition of skills and abilities (3 ECTS) through the realization of web positioning projects, analytics and digital marketing plans, both individually and/or in groups.

The methodology of this course involves learning as a process of construction, and teaching as a support. Thus the teaching-learning process will encourage continuous learning and collaborative students, facilitating the exchange of experience between them.

## ASSESSMENT SYSTEM

<b>% end-of-term-examination:</b>	60
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	40

There will be a continuous process of assessment in accordance with the following parameters:

-Formative assessment activities, based on measuring the acquisition of knowledge, as well as carrying out practical activities and exercises, both individual and in groups.

<b>% end-of-term-examination:</b>	60
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	40

-Final exam.

According to University policy, in the regular exam session the student who did not follow the continuous assessment is entitled to take an exam for the 60% of the final grade.

In the extra exam session, if the student did not follow the continuous assessment, is entitled to take an exam for the 100% of the final grade. If she did follow the continuous assessment, her grade will be the most beneficial: considering an exam weight of 30% plus the continuous assessment score, or an exam weight of 100%, discarding the score obtained in continuous assessment.

NOTE: Plagiarism in any of the course assignments means losing the grade of that assignment.

#### BASIC BIBLIOGRAPHY

- O'Neil, Cathy; Schutt, Rachel Doing Data Science: Straight Talk from the Frontline, O'Reilly, 2013