Big Data

Academic Year: (2024 / 2025) **Review date: 09-05-2024**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: CARBO RUBIERA, JAVIER IGNACIO

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Programming (preferably Python)

OBJECTIVES

General:
1. Analysis and synthesis skills
2. Planning and organization skills
3. Problem solving skills
4. Team work skills
5. Capacity to apply theoretical concepts into practical problems
6. Critical Reasoning skills

Knowledge:
1. Knowledge about main Artificial Intelligence (AI) techniques and concepts.
2. Knowledge about the application of the different AI techniques in different areas, such as business, banking or finance.
3. Knowledge about the complexity in implementing intelligent solutions in real environments.

Instrumental:
1. Designing intelligent systems to solve practical problems.
2. Critical analysis of real-life problems.
3. Using specific tools to develop intelligent systems.

Attitude:
1. Creativity.
2. Quality aspects.
3. Motivation.
4. Seeking solutions to new problems.

DESCRIPTION OF CONTENTS: PROGRAMME

1.- Introduction to Big Data
2.- Biga Data Methodology
3.- Big Data Classic Techniques
4.- Supervised Learning and Classifiers
5.- Regression trees and neural networks.
6.- Other approaches

LEARNING ACTIVITIES AND METHODOLOGY

Learning activities:
* Theoretical lectures: Mainly oriented to the acquisition of the theoretical knowledge of the subject' competences
* Practical lectures: Mainly oriented to problem solving. Practical activities will include (preferably in

Python) programming and the use of a public dataset.
* (online or onsite) Personal Tutoring (asked by email in advance)
Methodology:
* Oral lectures in classroom
* Problem solving

ASSESSMENT SYSTEM

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

The theory is weighted with the 40%.
The practical works carried out along the semester are weighted with the 60%.

ADDITIONAL BIBLIOGRAPHY

- Sebastian Raschka, Vahid Mirjalili Python Machine Learning, Packt Publishing, 2017