

Academic Year: (2021 / 2022)

Review date: 29-06-2021

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: SAEZ ACHAERANDIO, YAGO

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 1

OBJECTIVES

CB1. Students should demonstrate to possess and understand knowledge in an area of study that starts from the fundamentals of secondary education, and it is usually found at a level that, although supported by advanced textbooks, also includes some aspects that imply knowledge coming from the forefront of his field of study.

CB3. Students will gain the ability to gather and interpret relevant data (usually within their field of study) to make judgments that include a reflection on relevant issues of social, scientific or ethical nature.

CG3. Be able to manage, identify, gather and interpret relevant information on issues related to business in the digital age.

CG5 Learn how to design, plan and align the trends of technology (systems and information and communication technologies) with respect to the organization of the company and its evolution.

CT1. Be able to work in multidisciplinary and / or international teams as well as to organize and plan the work taking the right decisions based on the available information, gathering and interpreting relevant data to make judgments and critical thinking within the study area.

CT2. Be able to correctly expose and write a topic or compose a speech following a logical order, providing accurate information in accordance with established grammatical and lexical norms.

CT3. Be able to assess the reliability and quality of information and its sources using such information in an ethical manner, avoiding plagiarism, and in accordance with the academic and professional conventions of the study area.

CT5. Learn and be able to handle interpersonal skills on initiative and responsibility, negotiation, emotional intelligence, etc. as well as common software tools that allow to consolidate the basic technical skills that are required in every professional field.

CE13. Understand the advanced information systems, as well as the main technological tools applicable in companies and in business, as well as their needs in security and information protection issues, more precisely: cryptography, artificial intelligence and big data.

CE15. Know the main technology products and technology trends associated with the world of management and business, and know how to design their implementation and innovation in organizations.

CE16. Understand the possibilities of Big Data and artificial intelligence in business development, and get to know their implementation needs and their capabilities in improving business processes. Learn how to analyze and solve a problem in the disciplinary field of this Degree applying knowledge, skills, tools and strategies acquired or developed in it.

RA1. Have acquired advanced knowledge and demonstrated an understanding of the theoretical and practical aspects and the methodology of work in the field of business administration and digital technology with a depth that reaches the forefront of knowledge.

RA3. Have the ability to collect and interpret data and information on which to base their conclusions including, when necessary and relevant, reflection on social, scientific or ethical issues in the field of the digital age company.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to Big Data Data and Business Analytics
2. Models and Technologies for Decision Making
3. Descriptive Analytics
 - 3.1. Exploratory Data Analysis
 - 3.2 Business Reports and Visual Analytics
 - 3.3 Data Warehouses
4. Predictive Analytics and Data Mining
 - 4.1 Basic Concepts in Supervised Learning

- 4.2 Linear Regression
- 4.3 Decision Trees
- 4.4 Evaluation of Classifiers
- 4.5 Other Classification Techniques
- 4.6 Ensemble-based Methods
- 5. Neural Networks and Deep Learning
- 6. Big Data Specific Technologies
- 7. Emerging Trends and Impact of Business Analytics

LEARNING ACTIVITIES AND METHODOLOGY

AF1. THEORETICAL-PRACTICAL LECTURES. These lectures will present the knowledge that students should acquire. They will receive the lecture notes and will have basic texts of reference to facilitate the follow-up of the classes and the development of the subsequent work. Exercises, practical problems on the part of the student will be solved, and workshops and evaluation tests will be carried out to acquire the required skills.

AF2. TUTORIES. Individualized assistance (individual tutorials) or group (collective tutorials) to students given by the teacher.

AF3. INDIVIDUAL OR GROUP STUDENT WORK.

MD1 THEORY LECTURE. Talks with support of computer and audiovisual media, in which the main concepts of the subject are developed and the materials and bibliography are provided to complement the students' learning process.

MD2. PRACTICES. Resolution of practical cases, problems, etc. organized by the teacher individually and/or in groups.

MD3. TUTORIES. Individualized assistance (individual tutorials) or group (collective tutorials) to students given by the teacher. For 6 credits subjects, 4 hours will be dedicated with 100% of attendance required.

ASSESSMENT SYSTEM

SE1. FINAL TEST. This test will globally assess the knowledge, skills and abilities acquired throughout all the term.

SE2. CONTINUOUS ASSESSMENT. In this point, work, oral communication skills, debates, presentations in class, exercises, practices and work in the workshops throughout the course will be evaluated.

% end-of-term-examination:	20
% of continuous assessment (assignments, laboratory, practicals...):	80

BASIC BIBLIOGRAPHY

- Steve Williams Business Intelligence Strategy and Big Data Analytics: A General Management Perspective, Morgan Kaufmann, 2016

ADDITIONAL BIBLIOGRAPHY

- Stepanek, Hannah Thinking in Pandas, 1st ed. Berkeley, CA: Apress , 2020