

Academic Year: ( 2024 / 2025 )

Review date: 04-06-2021

Department assigned to the subject: Telematic Engineering Department

Coordinating teacher: MOURE GARRIDO, MARTA

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 2

## OBJECTIVES

CB1. Students have proven knowledge in an area of study that starts in secondary education and it is usually 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

CB2. Students know how to apply their knowledge to their work or vocation in a professional manner and that they possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

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

CE17: Students have proven knowledge of security and privacy requirements in big data and the relevant technical, organizational and legal protection measures. Students have proven knowledge of cipher techniques and how to apply them to protect data.

CE18: Students have the capacity to acquire basic and fundamental knowledge of network architectures.

CG1: Adequate knowledge and skills to analyse and synthesise basic problems related to engineering and data science, solve them and communicate them efficiently.

CG2: Adequate knowledge and skills to learn the next coming methods and technologies, and to adapt to new situations.

CG4: Ability to solve technological, computational, mathematical and statistical problems that may arise in engineering and data science.

CT1: Ability to communicate knowledge orally and in writing, before a specialised and non-specialised public.

RA1 Students should have acquired advanced knowledge and demonstrated an understanding of the theoretical and practical aspects and the methodology of work in the field of data science and engineering with a depth that reaches the forefront of knowledge

RA2 Students should be able to apply their knowledge and provide arguments to solve problems in complex scenarios that require new, creative ideas and innovation.

RA3 Students should 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 data engineering

## DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to Cybersecurity
2. Principles of Data Protection
3. Privacy in Big Data
4. Security management and government
5. Legal aspects of data protection

## LEARNING ACTIVITIES AND METHODOLOGY

AF1. THEORETICAL-PRACTICAL CLASSES. They will present the knowledge that students should acquire. They will receive the class notes and will have basic reference documents to facilitate the follow-up of the classes and the development of the subsequent work. Exercises and problems that students may

have, will be solved and workshops and evaluation tests will be carried out to develop the necessary skills.  
AF2: TUTORIALS. Individualized (individual tutorials) or group (collective tutorials) assistance to students will be provided by the teacher.

AF3: INDIVIDUAL OR GROUP STUDENT WORK.

AF8: WORKSHOPS AND LABORATORIES

AF9: FINAL EXAM. In which the knowledge, skills and abilities acquired throughout the course will be assessed globally.

MD1: CLASS THEORY. Exhibitions in the teacher's class with support of computer and audiovisual media, in which the main concepts of the subject are developed and materials and bibliography are provided to complement the students' learning.

MD2: PRACTICES. Resolution of practical cases, problems, etc. raised by the teacher individually or in groups.

MD3: TUTORIALS. Individualized assistance (individual tutorials) or group (collective tutorials) to students by the teacher.

MD6: LABORATORY PRACTICES. Applied / experimental teaching to workshops and laboratories under the supervision of a tutor.

## ASSESSMENT SYSTEM

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

SE1: FINAL EXAMINATION In which the knowledge, skills and abilities acquired throughout the course will be assessed globally.

SE2: CONTINUOUS EVALUATION. Work, presentations, debates, exhibitions in class, exercises, practices and work in the workshops throughout the course will be evaluated.

## BASIC BIBLIOGRAPHY

- Alfred J. Menezes , Jonathan Katz , Paul C. van Oorschot , Scott A. Vanstone Handbook of Applied Cryptography (Discrete Mathematics and Its Applications), CRC Press, 1996

- Josep Domingo-Ferrer, David Sánchez, Jordi Soria-Comas Database Anonymization: Privacy Models, Data Utility, and Microaggregation-based Inter-model Connections, Morgan & Claypool Publishers , 2017