Universidad Carlos III de Madrid

Databases and Infrastructures

Academic Year: (2023 / 2024)   **Review date: 28-04-2023**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: CALLE GOMEZ, FRANCISCO JAVIER

Type: Additional training ECTS Credits : 2.0

Year : 0 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Programming basic skills

OBJECTIVES

+ Understand the fundamentals of transactional databases
+ Ability to implement simple relational databases
+ Understand the management of information in a relational database

DESCRIPTION OF CONTENTS: PROGRAMME

Introduction to the Relational Model
Relational Database Design
Relational Database Implementation: SQL for Description

Manipulating Relational Databases
Relational Database Operation: SQL for Manipulation

LEARNING ACTIVITIES AND METHODOLOGY

LEARNING ACTIVITIES
AF1 Theoretical presentations through on-line synchronous teaching supported by electronic material, such as digital presentations
AF2 E-learning activities
AF3 Theoretical-practical classes through on-line synchronous teaching
AF4 Laboratory practices
AF5 Tutoring sessions
AF7 Individual student work

TEACHING METHODOLOGIES
- MD1: Lectures in class (on line synchronous teaching) by the teacher with computer and audiovisual media support, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.
- MD2: Critical reading of texts recommended by the lecturer: press papers, reports, manuals and / or academic papers, either for later discussion in class, or to expand and consolidate knowledge of the subject.
- MD3: Resolution of practical cases, problems, etc.¿ raised by the teacher individually or in teams.
- MD4: Presentation and discussion in class, under the moderation of the teacher, of topics related to the content of the subject, as well as practical cases.
- MD5: Preparation of work and reports individually or in teams.
- MD6: Specific e-learning activities, related to the semi-presential nature of the degree, including viewing of recorded content, self-correction activities, participation in forums, and any other online teaching mechanism.

ASSESSMENT SYSTEM

Individual or group work carried out during the course, both in presential activities and e-learning: 60%
Partial and/or final individual exams: 40%

% end-of-term-examination: 60

% of continuous assessment (assigments, laboratory, practicals…):   40

BASIC BIBLIOGRAPHY

- Elmasri, R. y Navathe, S. Fundamentals of Database Systems (7th ed.), Pearson Education, 2017
- Silverschatz, A., Korth, H. F. y Sudarshan, S. Database System Concepts, 7th ed , Mc-Graw Hill, 2019