

## 27025 - Database Systems I

### Syllabus Information

**Academic Year:** 2021/22

**Subject:** 27025 - Database Systems I

**Faculty / School:** 100 - Facultad de Ciencias

**Degree:** 453 - Degree in Mathematics

**ECTS:** 6.0

**Year:** 4

**Semester:** Second semester

**Subject Type:** Optional

**Module:**

### 1. General information

### 2. Learning goals

### 3. Assessment (1st and 2nd call)

### 4. Methodology, learning tasks, syllabus and resources

#### 4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as theory sessions, problem-solving sessions and autonomous work and study.

#### 4.2. Learning tasks

This course is organized as follows:

- **Theory sessions.**
- **Problem-solving sessions.** Acquisition of skills in the use of computer tools. Exposition of the solutions to the proposed activities and problems. Development of skills in the use of computer tools. Resolution of cases drawn from the real world. Analysis and specification of the solutions to the proposed practical cases.
- **Autonomous work and study.**
- **Assessment tasks.** A final exam will take place as well as two midterm exams.

The teaching activities and assessment tasks will take place in a face-to-face mode, except in the case that, due to the health situation, the dispositions emitted by the competent authorities and by the University of Zaragoza compel to take them to a greater or lesser extent in a telematic form.

#### 4.3. Syllabus

This course will address the following topics:

- **Topic 1.** Overview of database technology.
- **Topic 2.** Table-based data models.
- **Topic 3.** The relational model.

- **Topic 4.** SQL: query language for relational databases.
- **Topic 5.** Technological design in databases: methodology.
- **Topic 6.** The conceptual schema: entity-relationship model. Perspective, formal model of knowledge representation and data model.
- **Topic 7.** Textual specification of entity-relationship schemes.
- **Topic 8.** An extended entity-relationship model.
- **Topic 9.** Rules for the transformation of an entity-relationship schema into a relational schema.

#### 4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Sciences website and Moodle.

#### 4.5. Bibliography and recommended resources

1. Connolly, T. M., & Begg, C. E. (2005). Sistemas de bases de datos : un enfoque práctico para diseño, implementación y gestión. Madrid [etc.] : Pearson Educación, D.L. 2005.
2. Date, C. J., & Darwen, H. (1997). A Guide To Sql Standard (4th ed). Reading: Addison-Wesley.
3. Elmasri, R., & Navathe, S. B. (2007). Fundamentos de sistemas de bases de datos. Madrid [etc.] : Pearson Addison Wesley, D.L. 2007.

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=27025>