

**2010-11 academic year**

## Databases (21412)

**Degree/study:** Bachelor's degree in Computer Sciences, Bachelor's Degree in Telematics Engineering, Bachelor's degree in Audiovisual Systems Engineering

**Year:** 1st

**Term:** 3rd

**Number of ECTS credits:** 4 credits

**Hours of study dedication:** 100 hours

**Teaching language or languages:** catalan and spanish

**Teaching Staff:** Jesús Bisbal, Nadjat Bouayad-Agha, Horacio Saggion

### 1. Presentation of the subject

The Databases subject is part of a group of programming subjects that aim at students on the first year of the Engineering degrees. It is a complement for the programming subjects taught during the first year of studies.

Its aim is that students are able to analyse problems and to give valid solutions related to database management systems by the end of the term. More specifically, the Databases subject is about conceptual modelling, relational algebra and the use of structured query language (SQL) amongst others.

The subject comprises three main activities: lectures, seminars and laboratory sessions. In the lectures, the basic concepts on database theory are introduced together with some application examples. In the seminars, students will have to solve problems, which will have been given before the session. Each program corresponds to one of the concepts explained in the lectures. In the laboratory sessions, students will have the opportunity to put into practice the knowledge from the lectures and the seminars with some practical problems to be solved.

### 2. Prerequisites to follow the subject

To understand the contents of this subject, the students need to have a deep knowledge on the topics covered in Programming Fundamentals and Linear Algebra and Discrete Mathematics. More specifically, it is important that students have a high command on the mathematical concepts studied in the Linear Algebra and Discrete Mathematics.

### 3. Competences to be attained

The main objective of this subject is students become acquainted with the basic aspects on database management systems and that they are able to analyse database-related problems, which include designing and implementing a database.

The competences to be obtained at the end of the subject are listed underneath. General competences are not directly related to the subject's main topic (that is databases), they are abilities with have to do with the engineering profession. Specific competences are directly related to the topics that the subject deals with.

General competences	Specific competences
<b>Instrumental</b> 1. Cognitive abilities 2. Common sense	1. Capacity to design a database using the Entity-Relationship model from some real-world specifications. 2. Deep knowledge on structured query language (SQL) to perform easy and more complex consult operations on a database.