

**Información del Plan Docente**

<b>Academic Year</b>	2016/17
<b>Academic center</b>	110 - Escuela de Ingeniería y Arquitectura 326 - Escuela Universitaria Politécnica de Teruel
<b>Degree</b>	439 - Bachelor's Degree in Informatics Engineering 443 - Bachelor's Degree in Informatics Engineering
<b>ECTS</b>	6.0
<b>Course</b>	2
<b>Period</b>	Second semester
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

**1. Basic info****1.1. Recommendations to take this course****1.2. Activities and key dates for the course****2. Initiation****2.1. Learning outcomes that define the subject****2.2. Introduction****3. Context and competences****3.1. Goals****3.2. Context and meaning of the subject in the degree****3.3. Competences****3.4. Importance of learning outcomes****4. Evaluation****5. Activities and resources****5.1. General methodological presentation**

The learning process of this course is based on:

- The presentation of contents by the professors, and the resolution of exercises in class.
- The personal study by the students and their participation in class in solving exercises.
- The development of practical assignments by the students, oriented by the professors, who will develop the theoretical knowledge acquired.

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It must be taken into account that, although the course has a practical orientation, acquiring the needed theoretical knowledge is also required. Therefore, the learning process emphasizes both the theoretical concepts and the individualized study as well as the development of the practical work.

### 5.2.Learning activities

The program helps achieving the expected learning goals by including the following activities...

- In the classes, the program of the course will be developed.
- In problem classes, problems applying the concepts and techniques presented in the course syllabus will be solved.
- Lab classes will be developed in a computer lab. In those sessions, the students will perform practical assignments related with the subject, and basically with the design, management and/or database exploitation.

### 5.3.Program

#### 1. Introduction

##### 1.1 Database Management Systems (DBMS)

##### 1.2 Database Design

#### 2. Conceptual Database Design

##### 2.1 Entity-Relationship Model (E/R). Notation

##### 2.2 Conceptual Design Methodology. Practical examples

#### 3. Logical Database Design

##### 3.1 Data Models. Relational Model. Relational Algebra (RA)

##### 3.2 Normalization

##### 3.3 Relational Languages: Structured Query Language (SQL)

##### 3.4 Study Cases

#### 4. Physical Database Design

##### 4.1 Physical storage and organization of information y organización física de la información

##### 4.2 Physical design of Relational Databases

##### 4.3 Adjustment, monitoring y optimization. Adaptation to the available DBMS

#### 5. Database Exploitation

##### 5.1 Recovery and concurrency management

##### 5.2 Interaction with a DBMS

##### 5.3 Database Administration

### 5.4.Planning and scheduling

The calendar of classes, lab sessions and exams, as well as the dates of delivery of evaluation assignments, will be announced in advance, according to the sessions and dates established by the School.

The course/subject consist of 6 ECTS credits, of which 2,4 credits belong to Face-To-Face (F2F) class and 3,6 no

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presential credits. So, student dedication to achieve the learning outcomes in this course, it is estimated at 150 hours (60 F2F y 90 no presential) distributed as follows:

- 57 hours, approximately, of F2F sessions (theoretical classes, problems and labs).
- 40 hours for the preparation of the practical exercises and design work database.
- 50 hours of effective personal study (notes and texts, troubleshooting, preparation of lesson and lab sessions, database design).
- 3 hours of written final exam.

### 5.5. Bibliography and recommended resources