Universidad Zaragoza
1542

Year : 2018/19

30219 - Databases

Syllabus Information

Academic Year:	2018/19
Subject:	30219 - Databases
Faculty / School:	110 - 326 -
Degree:	443 - Bachelor's Degree in Informatics Engineering 439 - Bachelor's Degree in Informatics Engineering
ECTS:	6.0
Year:	443 - Bachelor's Degree in Informatics Engineering: 2 439 - Bachelor's Degree in Informatics Engineering: 2
Semester:	Second semester
Subject Type:	Compulsory
Module:	---

General information

Aims of the course

Context and importance of this course in the degree

Recommendations to take this course

Learning goals

Competences

Learning goals

Importance of learning goals

Assessment (1st and 2nd call)

Assessment tasks (description of tasks, marking system and assessment criteria)

Methodology, learning tasks, syllabus and resources

Methodological overview

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.

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.

Learning tasks

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.

Syllabus

1. Introduction
1.1 Database Management Systems (DBMS)
1.2 Database Design

2. Conceptual Database Design

2.1 Entitiy-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

Course planning and calendar

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 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 sesions, database design).
- 3 hours of written final exam.

Bibliography and recommended resources

Zaragoza:

BB	Elmasri, Ramez. Fundamentos de sistemas de bases de datos / Ramez Elmasri, Shamkant B. Navathe ; traducción, José Manuel Díaz . 5ª ed. Madrid [etc.] : Pearson Addison Wesley, D.L. 2007
BB	Silberschatz, Abraham. Fundamentos de bases de datos / Abraham Silberschatz, Henry F. Korth, S. Sudarshan ; revisión técnica Jesús Sánchez Allende . 6ª ed. Aravaca (Madrid) : McGraw-Hill Interamericana, D. L. 2014
BB	Takahashi, Mana. The Manga guide to databases / Mana Takahashi, Shoko Azuma, Trend-pro Co., LTD. . Tokyo : Ohmsha ; San Francisco, CA : No Starch Press, cop. 2009
BC	Connolly, Thomas M.. Sistemas de bases de datos : un enfoque práctico para diseño, implementación y gestión / Thomas M. Connolly, Carolyn E. Begg ; traducción, Vuelapluma . 4ª ed. Madrid [etc.] : Pearson Educación, D.L. 2005
BC	Tecnología y diseño de bases de datos / Mario G. Piattini Velthuis ... [et al.] . Paracuellos de Jarama (Madrid) : RA-MA, D.L. 2006

BB	Elmasri, Ramez. Fundamentos de sistemas de bases de datos / Ramez Elmasri, Shamkant B. Navathe ; traducción, José Manuel Díaz . - 5ª ed. Madrid [etc.] : Pearson Addison Wesley, D.L. 2007
BB	Silberschatz, Abraham. Fundamentos de bases de datos / Abraham Silberschatz, Henry F. Korth, S. Sudarshan ; traducción Fernando Sáenz Pérez, Antonio García Cordero, Jesús Correas Fernández ; revisión técnica Luis Grau Fernández . - 5ª ed. Aravaca (Madrid) : McGraw-Hill Interamericana, D. L. 2006
BC	Connolly, Thomas M.. Sistemas de bases de datos : un enfoque práctico para diseño, implementación y gestión / Thomas M. Connolly, Carolyn E. Begg ; traducción, Vuelapluma . - 4ª ed. Madrid [etc.] : Pearson Educación, D.L. 2005
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