Academic Year/course: 2022/23

30250 - Databases II

Syllabus Information

Academic Year: 2022/23

Subject: 30250 - Databases II

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

326 - Escuela Universitaria Politécnica de Teruel

Degree: 439 - Bachelor's Degree in Informatics Engineering

443 - Bachelor's Degree in Informatics Engineering

ECTS: 6.0

Year: 3

Semester: Second semester

Subject Type:

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:

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

In the course, the students' autonomous work will be encouraged. It is expected that students will learn from experience and from discussions among themselves and the professors. Through these discussions, the students will develop their critical abilities and skills to compare design alternatives or different solutions, assessing their advantages and disadvantages. At the same time, the professors will try to encourage peer learning.

4.2. Learning tasks

The course includes the following learning tasks:

- In the theory sessions, the program of the course will be developed.
- In problem-solving sessions, problems and exercises will be solved, and activities related to the reading and discussion of relevant texts may be performed.
- Laboratory sessions will be developed using a computer. In those sessions, the students will perform practical assignments related to the course, and particularly with the design, administration, and/or exploitation of databases.

4.3. Syllabus

The course will address the following topics:

1. Design of Databases:
- Post-relational data model. Object/relational databases.
- Design examples.

2. Distributed Databases:
- Motivation.
- Architectures and design of distributed databases.
- Information integration: Global-As-View, Local-As-View.
- Parallel databases, databases and the Internet, mobile databases.

3. Database Management Systems:
- Basic functions and architecture of a Database Management Systems (DBMS).
- Main DBMS and criteria for choosing a DBMS.
- Advanced functionalities of DBMS.
- Examples of DBMS (like, for example, Oracle, MySQL, PostgreSQL, NoSQL systems). Features, supported query language, other aspects (e.g., query optimization).

4. Administration and Exploitation of a Database:
- Roles of the database administrator.
- Security and management of privileges.
- Other aspects of administration: access from a program, support for the management of concurrency and recovery, the data dictionary, tuning of the database, data quality and availability.

4.4. 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.

4.5. Bibliography and recommended resources

EINA:
http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30250&Identificador=14715
EUPT:
http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30250&Identificador=13621