

Course Syllabi

CODE 306

NAME Databases II

Credits 6 ECTS

Period Spring Semester

Course Specifications

Lectures and laboratory work.

Objectives and contents

Advanced knowledge of Database Management Systems is essential for the proper functioning of an Information System. Beyond the mathematical foundations and basic concepts studied in the previous "Databases" course, this subject covers physical design, server-side programming, database security, concurrency control, and the particularities of systems designed to handle large volumes of data.

To successfully undertake this course, it is recommended that students have passed the first-year programming subjects and the second-year "Databases" course. The learning methodology includes the case study method and the development of objects on the server side.

Contents

Block 1 Database Architecture:

- 1) Basic administration concepts.
- 2) Server-side programming: stored procedures, functions, packages, triggers, and jobs.
- 3) Management of the physical and logical space of a database.

Bloc 2 Security and Integrity Control:

- 4) Security control in a database.
- 5) Semantic integrity and concurrent access control.

Bloc 3 Non-relational Databases:

- 6) Introduction to scalable database engines.

Assessment

- **First Ordinary Call:** Continuous evaluation consisting of individual assessment (7 points) and a group project (3 points). The individual assessment includes server-side programming (3 pts), physical/logical/security management (2 pts), and a theory exam (2 pts). To pass the course, students must obtain a total score of at least 5 points, with a minimum of 50% in the sum of individual tests, 50% in the group project, and over 30% in the theory exam.

Group work is essential to pass the subject; if it is not passed, it is not possible to pass the first ordinary call, and no results will be saved for the second call. The grade for the group project is individual and will be established through the evaluation of the work, interviews, and other activities set to clarify each student's participation in the project. If the group project is passed but the assessment of individual activities is not, the grades for the individual parts scoring above 50% of their value will be maintained for the second ordinary call

- **Second Ordinary and Extraordinary Calls:** A single exam worth 100% of the grade, divided into: Physical, logical, and security management (3 pts); Server-side programming

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(3 pts); and Theory exam (4 pts). A minimum total of 5 points is required, with at least 30% achieved in the theory section.

Lecturers

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