



34009 - PRINCIPLES OF DATABASES (2018-19)

General

Code: 34009

Lecturer responsible:

SUAREZ CUETO, ARMANDO

Credits ECTS:	6
Theoretical credits:	1,2
Practical credits:	1,2
Distance-base hours:	3,6

Departments involved

- **Dept:** LANGUAGES AND COMPUTING SYSTEMS
Area: LANGUAGES AND COMPUTING SYSTEMS
Theoretical credits: 1,2
Practical credits: 1,2
This Dept. is responsible for the course.
This Dept. is responsible for the final mark record.

Study programmes where this course is taught

- DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION
Course type: CORE (Year: 1)
- DEGREE IN COMPUTER ENGINEERING
Course type: CORE (Year: 1)

Competencies and objectives

Course context for academic year 2018-19

Foundations of Databases is a basic course that develops concepts presented in Programming 1 and Mathematics 1 and introduces the basics of databases, critical to the effective and efficient management software, including development and many other areas benefiting from its power and versatility.

It is also the first subject that opens the way to design Databases (2nd year) and, in general, to all subsequent courses dealing with design and management of large volumes of information and its integration into the structure company .

Course content (verified by ANECA in official undergraduate and Master's degrees)

General Competences (CG)

- **CG4** : Basic understanding of the use and programming of computers, operating systems, databases and computer programs applicable to engineering.
- **CG6** : Suitable understanding of the concept of companies, institutional and legal framework of companies. Company organisation and management.

Exclusive skill taught in this course

No data

Learning outcomes (Training objectives)

No data

Specific objectives stated by the academic staff for academic year 2018-19

- Know and apply techniques for persistent storage.
- Know and apply the basics of designing a database that reflects an information system .
- Know how to develop and maintain systems for basic relational databases.

Content and bibliography

Content for academic year 2018-19

Topic 1: Organization

General objectives of the course. Content. Assessment system, description of activities to be performed.

Topic 2 : Files and database techniques

Historical justification techniques BD. Major types and file organizations, advantages and disadvantages. Implementation framework and relationship with company databases. Legal issues associated with managing large volumes of data.

Topic 3 : Entity-Relationship data model

Basic concepts of the model and its application to BD.

Topic 4 : The Relational Data Model

Mathematical foundations and implementation: relation, domain and attribute.

Identification keys, foreign keys, null value.

Key integrity, referential integrity.

Representation of information systems, schema.

Definition and data manipulation languages: SQL and relational algebra and calculus; Relational and computationally complete language.

Normalization: concept of functional dependency. Normal forms.

Topic 5 : management of databases

DBMS Basics : architecture, functions, components, transactions, optimization and security. Distributed Databases. Other data models. NoSQL.

Assessment

Assessment procedures and criteria 2018-19

- The subject is scored from 0 to 150 points (INTERMEDIATE = 50 (2x25) + FINAL = 40 (1x40) + SQL = 60 (5x12)). Shall be considered passed only if it derives at least 50% of the maximum score (75 points or more).
- FINAL and SQL assessments require at least 40 % of the maximum score in each to make the sum of qualifications. INTERMEDIATE has no minimum requirement. Achieved this minimum, the final grade is the sum of all the ratings. Not getting any of these minima will be a failing grade with top marks in Proceedings of 4.5 points (in minutes, the scale is from 0 to 10).
- In the first call, if time and resources permit, it could even propose additional activities that would add extra, entirely optional score. In any case, circunscribirían the semester continuous assessment only, they never pose as a mechanism to make a final hold in a convocatoria anyone, or be taken into account in subsequent calls.
- The second call is to recover some or all of the established parties: TEST (intermediate) Exercises (final) or SQL. The student must decide which made according to your needs. The mark obtained in either party to which supersedes that obtained during the first call. This means that, when applying for one of these parties, and that concept does not take into account the fact during the first call.
- The extraordinary announcement of December, where applicable, will take place in a single examination including the three parts described above.

IMPORTANT

1. exam dates will not be advanced or backward to anyone under any circumstances. Those checks carried out in practice sessions (intermediate and SQL) support a shift change during the week that are made for serious reasons, teachers notice.
2. Except in the second round, none of the controls SQL, INTERMEDIATE FINAL theory exam or first call is retrieved. The not presented in these cases does not preclude pass the course, simply does not add to the overall score, except for the FINAL, the minimum score required.
3. If adopted on first call, you can not increase the note appearing in the second. The student has already closed its act of the subject and not on any of the following.
4. No additional activity of any kind to compensate a final failing grade.
5. The theoretical / practical work undertaken must be original. Detecting copy or plagiarism will entail the qualification of " 0 " in the corresponding work. The direction of the Department and the EPS will be informed about this issue. The repetition in behavior in this or any other subject entail notifying the relevant University Vicepresident of the misconduct to study the case and punish according to the law (Reglamento de disciplina académica de los Centros oficiales de Enseñanza Superior y de Enseñanza Técnica dependientes del Ministerio de Educación Nacional BOE 12/10/1954).

More information: fbddocs.dlsi.ua.es

Description	Criteria	Type	Weighting system
Intermediate questionnaires of theory	Mostly of type test, together with some exercise of direct application of the theory. There will be 2 tests during the course of no more than 1 hour each one.	ACTIVITIES OF EVALUATION DURING THE SEMESTER	27
SQL exams in sessions of practice	Exercises SQL of variable difficulty. 5 controls of 20 min, distributed during the course.	ACTIVITIES OF EVALUATION DURING THE SEMESTER	40
Practical theory exam	Handwritten examination in the official date of the UA, basically of exercises of application of the theory, in the announcement of June. In the announcement of recovery (July), the examination consists of 3 parts (Intermediate, SQL and FINAL), eligible by the student, applying the note of June in those parts that do not deliver . No more than 3 hours.	FINAL TEST	33

Official exam dates for academic year 2018-19

Exam session	Date	Time	Group - Classroom(s) allocated	Comments
(C3) Periodo ordinario para asignaturas de segundo semestre y anuales	07/06/2019			
	07/06/2019			Teoría
(C4) Pruebas extraordinarias para asignaturas de grado y máster	09/07/2019			
	09/07/2019			Teoría



