



Course guide

330247 - BD - Databases

Last modified: 25/04/2024

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.
Degree: BACHELOR'S DEGREE IN ICT SYSTEMS ENGINEERING (Syllabus 2010). (Optional subject).
Academic year: 2024 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: MARTA ISABEL TARRÉS PUERTAS

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. Know the architecture of database management systems
2. Know the basics of the relational data model
3. Know the theory of normalization and deepen the quality design of relational databases
4. Ability to design and implement relational databases. Application of integrity constraints to the design of a system and implementation based on an enterprise-level database management system
5. Ability to define and manipulate databases through SQL language statements
6. Know the concept of transaction and its implications.
7. Develop skills to carry out the functional modeling of the processes and data of a business problem.

Transversal:

8. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
9. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
10. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	20.00
Hours small group	30,0	20.00
Self study	90,0	60.00

Total learning time: 150 h



CONTENTS

(ENG) TEMA 1: INTRODUCCIÓ A LES BD I ARQUITECTURA DELS SGBD

Full-or-part-time: 30h

Theory classes: 6h

Laboratory classes: 6h

Self study : 18h

(ENG) TEMA 2: EL MODEL RELACIONAL I L'ÀLGEBRA RELACIONAL

Full-or-part-time: 30h

Theory classes: 6h

Laboratory classes: 6h

Self study : 18h

(ENG) TEMA 3: EL LENGUATGE SQL

Full-or-part-time: 30h

Theory classes: 6h

Laboratory classes: 6h

Self study : 18h

(ENG) TEMA 4: DISSENY DE BASES DE DADES

Full-or-part-time: 30h

Theory classes: 6h

Laboratory classes: 6h

Self study : 18h

(ENG) TEMA 5: BD AVANÇADES

Full-or-part-time: 30h

Theory classes: 6h

Laboratory classes: 6h

Self study : 18h

ACTIVITIES

(ENG) ACTIVITAT 1: CLASSE MAGISTRALS I PARTICIPATIVES

Full-or-part-time: 12h

Theory classes: 12h

(ENG) ACTIVITAT 2: CLASSE DE PROBLEMES

Full-or-part-time: 12h

Theory classes: 12h



(ENG) ACTIVITAT 3: CLASSE DE LABORATORI

Full-or-part-time: 41h
Laboratory classes: 26h
Self study: 15h

(ENG) ACTIVITAT 4: ESTUDI DE CONTINGUTS

Full-or-part-time: 20h
Self study: 20h

(ENG) ACTIVITAT 5: REALITZACIÓ D'EXERCICIS

Full-or-part-time: 25h
Self study: 25h

(ENG) ACTIVITAT 6: PROJECTE

Full-or-part-time: 28h
Theory classes: 4h
Laboratory classes: 4h
Self study: 20h

(ENG) ACTIVITAT 7: EXAMEN

Full-or-part-time: 12h
Theory classes: 2h
Self study: 10h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Garcia-Molina, Hector; Ullman, Jeffrey D.; Widom, Jennifer. Database systems: the complete book [on line]. 2nd ed. Essex: Pearson Education, 2014 [Consultation: 31/05/2022]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=5174436>. ISBN 9781292024479.
- Sistac i Planas, Jaume; Camps Paré, Rafael. Bases de dades [on line]. Barcelona: UOC, 2005 [Consultation: 11/06/2024]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=7015940>. ISBN 8497883349.
- Camps Paré, Rafael; Sistac i Planas, Jaume. Tècniques avançades de bases de dades. Barcelona: EDIUOC, 2000. ISBN 8484291065.