UAB
Universitat Autònoma de Barcelona

Information Storage and Recovery

Code: 104746
ECTS Credits: 6

2024/2025

Degree	Type	Year
2503873 Interactive Communication	OB	2

Contact

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Prerequisites

There are no prerequisites.

Teaching groups languages

You can view this information at the end of this document.

Objectives and Contextualisation

The main objectives of the course are the following:

- Know the evolution of technologies for information storage and retrieval.
- Distinguish the characteristics of the main database management systems.
- Know how to select the appropriate database management system according to the needs of its users.
- Know the different tools and techniques for database consultation.
- Apply knowledge about databases in the field of interactive communication.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Act within one's own area of knowledge, evaluating sex/gender-based inequalities.
- Determine and plan the technological infrastructure necessary for the creation, storage, analysis and distribution of interactive multimedia and social-networking products.
- Introduce changes in the methods and processes of the field of knowledge to provide innovative responses to the needs and demands of society.
- Manage time efficiently and plan for short-, medium- and long-term tasks.
- Promote and launch new products and services based on massive-scale mining and analysis of data from the Media.
- Search for, select and rank any type of source and document that is useful for creating messages, academic papers, presentations, etc.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Apply knowledge of technology to data protection.
3. Communicate using language that is not sexist or discriminatory.
4. Cross-check information to establish its veracity, using evaluation criteria.
5. Distinguish the most suitable software for designing and creating a database on the basis of an organisation's needs.
6. Distinguish the salient features in all types of documents within the subject.
7. Extract content for storage in databases and recover it when needed.
8. Plan and perform document search and management work.
9. Propose new methods or well-founded alternative solutions.
10. Propose projects and actions that are in accordance with the principles of ethical responsibility and respect for fundamental rights and obligations, diversity and democratic values.
11. Propose projects and actions that incorporate the gender perspective.
12. Recognise and master the technological infrastructure for storing information.
13. Submit high-quality coursework on time, which requires attention to both individual and group work.
14. Work individually to progress further in analysing and creating databases for their own sake.

Content

The contents that will be worked on in the course are structured in the following topics:

1. Technological evolution in information storage and retrieval.
2. Databases: concept and typologies.
3. Database management systems.
4. The textual model.
5. The entity-relationship model.
6. The relational model.
7. Information retrieval in databases. Introduction to SQL.
8. Databases and data security.
9. Databases as sources of information for interactive communication.

The calendar will be available on the first day of class. Students will find all information on the Virtual Campus: the description of the activities, teaching materials, and any necessary information for the proper follow-up of the course. In case of a change of teaching modality for health reasons, teachers will make readjustments in the schedule and methodologies.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Oral presentations	4	0.16	13, 14
Practical exercises	28	1.12	2, 5, 7, 12, 13, 14
Theory classes	14	0.56	5, 6, 12
Type: Supervised			
Elaboration of coursework	6	0.24	2, 4, 7, 8, 12, 13, 14

Type: Autonomous

Bibliography reading	15	0.6	4, 6, 14
Elaboration of coursework	47	1.88	2, 4, 7, 8, 12, 13, 14
Personal study	30	1.2	4, 5, 6, 12, 14

Theoretical classes will cover the contents of the syllabus.

The practical sessions are aimed at:

- Show the different types of databases and database management systems.
- To know the structure of the textual, entity-relational and relational models
- To know the principles of information retrieval in databases with special attention to the SQL language.

The course work is a group work in which an interactive communication project is proposed.

The results of both practical exercises and coursework will be presented in oral presentations.

The proposed teaching methodology may undergo some modifications depending on the health authorities' attendance restrictions.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Coursework	30%	1	0.04	2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 14
Monitoring of practical exercises	10%	1	0.04	2, 4, 5, 7, 8, 12, 13, 14
Practical test	20%	2	0.08	1, 2, 5, 7, 12
Theoretical questionnaire 1	20%	1	0.04	2, 4, 5, 6, 7, 12
Theoretical questionnaire 2	20%	1	0.04	2, 4, 5, 6, 7, 12

Assessment is continuous, which involves the following assessment activities:

A. Practical exercises. Value 10% of the final grade.

B. 2 theoretical questionnaires. Each worth 20% of the final grade.

C. 1 practical test. Worth 20% of the final grade.

D. Coursework. Value 30% of the final grade.

The final grade of the course is obtained from the sum of the grades of the five evaluation activities, according to their percentage weight.

In order to pass the course it is necessary

1. To have completed at least 70% of the practical exercises.

2. To have obtained an average of the weighted grades of activities B and C of no less than 3.5.

3. To have obtained an average of the five weighted grades of not less than 5.

Recovery

- Students will be entitled to the revaluation of the subject. They should present a minimum of activities that equals two-thirds of the total grading.
- The assessment activities excluded from recovery are: A (practical exercises) and D (coursework).
- If an average of 3.5 is not reached in activities B and C, a theoretical-practical recovery test will be held.

The proposed evaluation system may undergo some modification depending on the restrictions imposed by the health authorities.

Plagiarism

In the event that a student commits any irregularity that may lead to a significant variation in the mark for an assessment act, this assessment act will be marked 0, regardless of the disciplinary process that may be initiated. In the event of several irregularities occurring in the assessment acts of the same subject, the final grade for this subject will be 0.

This subject doesn't provide for the single assessment system.

Bibliography

Basic bibliography. A supplementary bibliography will be provided at the end of each topic.

Abadal, Ernest; Codina, Lluís. (2005). *Bases de datos documentales : características, funciones y método.* Madrid: Síntesis.

Burgués, Xavier. et al. (2015). *Diseño de bases de datos.* Barcelona: UOC. Disponible: https://cutt.ly/qo6KvTM

Celma, Matilde; Casamayor, Juan Carlos; Mota, Laura. (2003). *Bases de datos relacionales.* Madrid: Pearson Educación.

Codina, Lluís. (2015). *Sistemas de gestión de bases de datos documentales: características principales y metodologías de diseño.* Barcelona: UPF. Disponible: https://repositori.upf.edu/handle/10230/24625

Codina, Lluís. (1993). *Sistemes d'informació documental: concepció, anàlisi i disseny de sistemes de gestió documental amb microordinadors.* Barcelona: Pòrtic.

Ferran, Núria; Pérez-Montoro, Mario. (2013). *Búsqueda y recuperación de la información.* [Recurs electrònic]. Barcelona: UOC. https://shre.ink/IRoX

Luque, Irene. et al. (2001). *Bases de datos: desde Chen hasta Codd con Oracle.* Madrid: Ra-Ma.

Martínez, Luis Javier (2016). Cómo buscar y usar información científica: guía para estudiantes universitarios. Santander: Universidad de Cantabria. https://shre.ink/IRoD

Moya, Félix de. (2002). "Técnicas avanzadas de recuperación documental". En: López Yepes, J. *Manual de ciencias de la documentación.* Madrid: Pirámide.

Silberschatz, Abraham; Korth, Henry; Sudarshan,Sundararajarao. (2014). *Fundamentos de bases de datos*. Madrid: McGraw-Hill.

Software

MySQL

Language list

Name	Group	Language	Semester	Turn
(PLAB) Practical laboratories	61	Catalan	second semester	afternoon
(PLAB) Practical laboratories	62	Catalan	second semester	afternoon
(TE) Theory	6	Catalan	second semester	afternoon