

**122040064 - Bachelor of Computer Science (face to face and online) (2026)****0064011 - Data Analytics*****Dades generals*****Codi:** 0064011**Tipus:** OB**Semestre:** 4**Crèdits:** 10.0**Llengua
d'impartició:** Anglès**Llengua de suport:** Anglès***Informació*****Presentació del mòdul:**

This module introduces the fundamental concepts of data processing and analysis, providing the necessary knowledge to understand the processes that allow the extraction of relevant information from diverse datasets. Students will work with the main phases of the data lifecycle, including data organisation, preparation, and exploration, as well as the foundational elements of data mining and machine learning techniques.

Also, the module examines the criteria that guide the interpretation and validation of results. Students will work with the most common models to identify patterns, formulate predictions, and support decision-making in professional environments. In parallel, the ethical and responsibility aspects associated with data management are analysed, emphasising quality, transparency, and the rigorous use of information within analytical processes.

Metodologia:

Teaching methods combine a theoretical approach with a practice-oriented focus in order to guide and provide the students with the necessary skills to carry out the different activities of the module and, more specifically, to solve the challenge.

The implementation of this methodology requires continuous collaboration between the

teaching staff and the students. Consequently, each week, this module includes 6 scheduled face-to-face teaching sessions dedicated to seminars, as well as 1 guided work session.

Alternatively, for students following their training in a virtual modality, and as a complement for face-to-face students, seminars and guided work sessions will be monitored through the virtual campus, as well as through online consultations and tutorials. Furthermore, students in the virtual modality have the opportunity to attend any of the face-to-face sessions dedicated to seminars or guided work that they consider appropriate.

During the seminar sessions, the teaching staff provide students with the content and tools required to develop the activities and challenge of the module.

During the guided work sessions, the academic tutor provides guidance and monitors students' progress in the development of the challenge.

In addition, independent study, which is required throughout the entire semester, intensifies during the final weeks in order to achieve the final resolution of the module's challenge.

Avaluació continuada:

Students may choose to be assessed on their learning outcomes either through virtual assignments and face-to-face examinations scheduled throughout the semester, or through virtual assignments and a single face-to-face examination held at the end of the teaching period.

The various continuous assessment activities (virtual assignments and face-to-face examination/s) are determined by the teaching staff and will be available in the seminar schedule.

The dates regarding the submission and presentation of the challenge will be provided in the module's challenge classroom.

Please consult the syllabus for each seminar and the challenge virtual classroom.

Avaluació final:

Students who have not passed or completed the continuous assessment must take the face-to-face final examination for the seminar.

The various final assessment activities (virtual assignments and the final examination) are determined by the teaching staff and will be available in the seminar schedule.

The dates regarding the submission and presentation of the challenge will be provided in the module's challenge virtual classroom.

Please consult the syllabus for each seminar and the challenge virtual classroom.

Bibliografia bàsica:

Each seminar will detail the basic bibliography.

Bibliografia complementària:

Each seminar will detail the complementary bibliography.

Observacions:

The module has associated learning outcomes, which are described in its syllabus. These learning outcomes are assessed using a numerical scale from 0 to 10 to one decimal place.

To pass the module, the grade for all associated learning outcomes must be greater than or equal to 5.

The final grade for the module is calculated as the arithmetic mean of the grades obtained in the learning outcomes.

Furthermore, the learning outcomes of the module, each at its respective competence level, contribute to the assessment of the specific and transversal competences that the students will have acquired by the end of their studies.

Competències / Resultats d'aprenentatge específics (4)

	Codi - Competències (C) / Resultat d'aprenentatge específic (RA)	Nivell
C	BInfo26-E007 - Implement applications based on both centralized and distributed databases.	
RA	BInfo26-E007-02 - Use storage models consistent with the volume, structure, and requirements of the data.	2
RA	BInfo26-E007-03 - Apply data mining techniques to prepare, model, and validate information.	2
C	BInfo26-E011 - Apply the fundamental principles and basic techniques of intelligent systems.	
RA	BInfo26-E011-03 - Apply different machine learning techniques.	2
RA	BInfo26-E011-04 - Analyse different machine learning techniques.	3

Competències / Resultats d'aprenentatge transversals (1)

	Codi - Competències (C) / Resultat d'aprenentatge transversal (RA)	Àrea	Nivell
C	BInfo26-T004 - Act according to ethical principles and social responsibility as both a citizen and a professional.	Ètica i responsabilitat social	
RA	BInfo26-T004-02 - Analyse complex situations, identifying risks and making ethically responsible decisions.		2

Continguts (2)

1. Seminar: Data Management and Analysis
2. Seminar: Machine Learning