EAE Business School Barcelona

Bachelor Degree in Business Administration and Management and Business Transformation

Course: Artificial intelligence and machine learning

Subject: Computer science

Credito: 6 ECTS

Program: Bachelor

Modality: On-Site

Year: Second

Semester: First

Academic Year: 2026–2027

1. Index

2. Presentation

Organizations can use information from Business Intelligence and data analysis to improve business decisions, identify problems, spot market trends, and find new revenue or business opportunities. But with the evolution of AI (Artificial Intelligence) is the basis of the next era of business reinvention. This subject will help explore AI capabilities and reach new dimensions to transform every area, industry and business for the better. The subject aims for multidisciplinary students to receive AI training to understand their potential and identify adoption opportunities in each sector. This empowers each project with creativity and the power of technology in transforming the business towards a more sustainable and efficient business.

3. Learning outcome of the degree

- RAT1 - The graduate will be able to recognize the tasks of the different functional areas within a company or organization, taking into account previous theoretical learning about business structures.
- RAT4 - The student will describe the techniques of management in the development of business organizations by means of different written tests.
- RAT6 - The graduate will be able to understand the different data analysis techniques used to assess the feasibility of a business project.
- RAT9 - The student will be able to provide clear and precise explanations of any knowledge/information, both orally and in writing, in Catalan, Spanish and a third language, particularly English.
- RAT10 - The student will be able to apply digital technologies (at the right time) in his/her field of expertise.
- RAT12 - The graduate will be able to develop both traditional and digital marketing and promotional projects in a business environment.
- RAT18 - The student will be able to provide innovative, creative and entrepreneurial solutions in professional situations.
- RAT19 - The student will be able to evaluate the sustainability and social impact of the proposals presented, with ethical, environmental and professional responsibility.
- RAT20 - The student will be able to apply the gender perspective in the professional tasks.
- RAT22 – After completing the degree, the student will be able to design work processes to achieve organizational efficiency.
- RAT23 – The graduate will be able to actively propose a plan for the implementation and support of information and communication systems for the digital transformation of the organization, according to a project based on a real business case.

4. Learning outcomes of the subjects

- RAM3 - The student will be able to clearly identify the ethical, cultural and social problems brought about by technological systems.
- RAM4 - The student will be able to practice the proper use of technology, information and software systems for a digital transformation.
- RAM7 - The student will be able to correctly interpret management techniques and economic aspects related to the production of technological tools.
- RAM8 - The student will be able to properly use management techniques and technological tools for a digital transformation.

5. Contents

- Introduction to Artificial Intelligence
- Troubleshooting by search
- Algorithms for inference
- Forward chaining
- Backward chaining
- Uncertainty in Artificial Intelligence through probabilities
- Supervised learning: classification problems
- Bayes' theorem
- Supervised learning: classification problems
- Machine vision
- Programming no code / low code.

6. Methodology

Learning outcomes developed	Teaching methodology	Training activities
Knowledge	Master class	Teacher's presentations
	Instructional sessions	Student's presentations
	Tutoring	Meetings for the resolution of doubts
	Learning based on readings	Reading and analysis of documents
Skill	Learning based on projects	Problem solving
	Learning based on audio-visual	Audiovisual analysis
	Case-based learning	Search and processing of information. Problem solving
Competence	Project-based work	Reporting Submissions of reports or papers

7. Evaluation

Evaluation system	Weight
Continuous evaluation: exercises, problems, reporting, papers, case studies	40 %
Mid-term exam	20 %
Final exam	40 %

The regulations include a mandatory attendance requirement of 75%.

Regular attendance at in-person teaching activities is a fundamental academic requirement for the proper acquisition of the competencies and learning outcomes of the course. Accordingly, a minimum attendance rate of **75% of all scheduled sessions** is mandatory.

Failure to meet this minimum attendance requirement will result in the loss of the right to sit the final examination for the course. Consequently, the student will receive a failing grade, with no possibility of

reassessment or second-chance opportunities, in accordance with the University's current academic regulations.

1. Absences are divided into two categories: **excused** and **unexcused**. Excused absences are those that can be supported by appropriate documentation. All other absences are considered unexcused.
2. Supporting documentation for an excused absence must be submitted to the teaching staff within a maximum period of **7 days**. The documentation must clearly include the student's personal details, as well as the date and time period during which the student was prevented from attending class.

Continuous assessment

The final grade for the subject is calculated based on the weighting of three evaluation blocks, divided into evaluable activities:

A. Midterm exam: 20%

B. Exercises, problems, preparation of reports, assignments, presentations: 40%

1. Four evaluable activities: 5% each

2. A group assignment or report: 10%

3. A group presentation: 10%

C. Final exam: 40%

These three blocks will only be weighted if the final exam grade is equal to or greater than 4.0. If the final exam grade is less than 4.0, the subject cannot be passed.

In the event that the subject is failed and, in turn, the final exam grade is less than 5.0, the student can recover the final exam with an additional test. If the weighted grade for the activities in section B is less than 5, this is also recoverable. With the result obtained, the final grade for the subject will be calculated according to the previous criteria.

Students who do not attend evaluative activities with a weight greater than 50% will receive an overall course grade of “Not presented.”

Single Evaluation

The single evaluation consists of a single exam that is equivalent to 100% of the course grade. The exam, and therefore the subject, is passed with a grade of 5 out of 10 in this final test. In case of obtaining a grade lower than 5.0, the student has the right to a make-up exam.

To benefit from the single evaluation, it is necessary to send a written request to the coordination during the first 15 business days of the course.

8. Bibliography

- Vega, M. Á., Mora, L. M. Q., & Badilla, M. V. C. (2020). Inteligencia artificial y aprendizaje automático en medicina. *Revista médica sinergia*, *5*(8), e557-e557.
- de Souza, E. R. (2023). Evaluación de la accesibilidad web: oportunidades con inteligencia artificial y aprendizaje automático. *Cuadernos del Centro de Estudios de Diseño y Comunicación*, (191).
- Guevara, P. R. (2023). El aprendizaje de las máquinas: El 'Machine learning', una rama de la inteligencia artificial en auge. *Alfa*, (55), 6-11.
- De La Cruz, M. A. T., Benites, E. M. M., Cachinelli, C. G. C., & Caicedo, E. V. A. (2023). Incidencias de la inteligencia artificial en la educación. *RECIMUNDO*, *7*(2), 238-251.