

| Degree programme                    | Type | Course |
|-------------------------------------|------|--------|
| Bachelor in Artificial Intelligence | OB   | 3      |

## Contact lecturer

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## Prerequisites

There are no official prerequisites but it is recommended to have completed the subjects of Fundamentals of Programming I and II, Data Engineering, Problem Solving, Ethics and Fundamentals of Machine Learning.

## Group languages

You can consult this information at the [end](#) of the document.

## Objectives

The objective of the subject is to develop a project in groups that requires applying the knowledge acquired in the rest of the subjects to the design and implementation of a solution to a real challenge of artificial intelligence application. For this, the different phases in the development of a project will be addressed, including the analysis of the challenge, the design of the solution, the selection of the methodology and the necessary tools, the implementation of the solution, the analysis of the results and the conclusions. We will introduce techniques for project management and teamwork organization, as well as communication skills to expose, argue and show the result of the project. The potential ethical implications of the proposed solution will also be considered.

## Learning outcomes

- CM20 (Organise the planning, development, and monitoring of the necessary stages for the realisation of an AI project.) Organise the planning, development, and monitoring of the necessary stages for the realisation of an AI project.
- CM21 (Propose alternatives to minimise ethical risks in the design and development of an AI project, complying with existing regulations.) Propose alternatives to minimise ethical risks in the design and development of an AI project, complying with existing regulations.
- CM22 (Organise the configuration of work teams and the distribution of tasks and responsibilities in an equitable manner, avoiding discrimination and bias of any kind.) Organise the configuration of work teams and the distribution of tasks and responsibilities in an equitable manner, avoiding discrimination and bias of any kind.
- CM23 (Work in coordination with the rest of the development team of an AI project by assuming the individual roles and tasks assigned with responsibility and autonomy.) Work in coordination with the rest of the development team of an AI project by assuming the individual roles and tasks assigned with responsibility and autonomy.
- SM47 (Determine the needs and requirements of an AI project.) Determine the needs and requirements of an AI project.
- SM48 (Select the most appropriate methods for solving a complex AI problem.) Select the most appropriate methods for solving a complex AI problem.
- SM50 (Present the summary, results, and conclusions of the development of an AI project.) Present the

summary, results, and conclusions of the development of an AI project.

## Contents

- Project management
- Design thinking
- Ethical aspects of an AI project
- Communication skills
- Practical development of an AI project

## Learning activities and methodology

| Title               | Hours | ECTS | Learning outcomes                        |
|---------------------|-------|------|------------------------------------------|
| Follow-up sessions  | 10    | 0.4  | CM20, CM22, CM23                         |
| Project development | 111   | 4.44 | CM20, CM21, CM22, CM23, SM47, SM48, SM50 |
| Theory sessions     | 15    | 0.6  | SM47, SM48, SM50                         |

The course will be organized around the development of a practical project based on a real challenge. Students will work in small groups of 4-6 members in the design and development of a solution to one of the proposed challenges. During the development of the project, we will introduce concepts of project management, ethical audit and communication skills.

Class activities will be organized in two types of sessions:

- Practical sessions: in these sessions the class group will be divided into two smaller groups. These sessions will be devoted to practical work on the development of the project: analysis of the problem, design of the solution, follow-up of the work, oral presentations, ...
- Theoretical sessions in which we will introduce some concepts that will be necessary to complete the project about project management, design thinking, ethical aspects and communication.

Students will have to extend the work done in the class sessions with their own work at home in order to be able to complete the project. The main body of the work necessary for the development of the project will have to be done in an autonomous way, apart from class hours.

All the information of the subject and the related documents that the students need will be available at the virtual campus (cv.uab.cat).

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.

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## Assessment

### Continuous assessment activities

| Title                    | Weight | Hours | ECTS | Learning outcomes |
|--------------------------|--------|-------|------|-------------------|
| Follow-up of the project | 20%    | 2     | 0.08 | CM20, CM22, CM23  |

|                               |     |    |      |                  |
|-------------------------------|-----|----|------|------------------|
| Final delivery of the project | 50% | 0  | 0    | CM21, SM47, SM48 |
| Project report                | 10% | 10 | 0.4  | SM50             |
| Oral presentations            | 15% | 2  | 0.08 | SM50             |

The project grade is calculated weighting the evidences collected in each of the following activities:

- Follow-up sessions (20%): there will be some class sessions to monitor and assess the progress of the work done by the students.
- Written report (10%): students will have to write a final report describing their solution and presenting and discussing the main results.
- Oral presentation (15%): students will have to make a final oral presentation presenting the work done during the course.
- Technical quality of the implemented solution (50%): this evidence will correspond to the assessment of the design, implementation and testing of the proposed solution.
- Class attendance (5%)

In some of these evidences (follow-up sessions and oral presentation) there will be a group grade, but also an individual grade depending on the contribution of each student.

In order to obtain the final grade of the subject, the project grade calculated according to the previous criteria will be weighted by a grade of the individual contribution of each student to the project.

Final grade = Individual assessment \* Project grade

The individual assessment of each student will be obtained through a process of intra-group evaluation where each member of the group will assess the contribution of the other members of the group.

As the development of the project is a continuous process throughout the semester, there is no recovery option in case the final grade does not reach the minimum of 5

In this subject, the use of generative Artificial Intelligence technologies is allowed in a controlled manner. The student must clearly identify which parts of his/her work have been carried out with the support of generative AI tools and, in any case, must be able to understand, explain and justify the work carried out. The lack of transparency in the use of generative AI will be considered a lack of academic honesty and may lead to a partial or total penalty in the grade of the activity.

## Bibliography

No specific bibliography is recommended

## Software

No specific software is required. It will depend on the project and techniques applied

## Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

| Type of teaching | Group | Language | Semester | Shift |
|------------------|-------|----------|----------|-------|
|                  |       |          |          |       |

|                                          |     |         |                    |           |
|------------------------------------------|-----|---------|--------------------|-----------|
| (ABP) Aprenentatge basat<br>en problemes | 711 | English | second<br>semester | afternoon |
|------------------------------------------|-----|---------|--------------------|-----------|