UAB
Universitat Autònoma de Barcelona

# Data-project Management

Code: 104417
ECTS Credits: 6

2025/2026

| Degree | Type | Year |
|---|---|---|
| Computational Mathematics and Data Analytics | OP | 4 |

## Contact

Name: Jacobus Cornelis Adrianus Maria Antens

Email: coen.antens@uab.cat

## Teachers

Pere Vilagut Abad

## Teaching groups languages

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

## Prerequisites

There are none.

## Objectives and Contextualisation

The specific goal of the course is to introduce the set of techniques and skills needed to design, plan and develop projects at a professional level in the fields of companies and organizations, particularly those related to Artificial Intelligence.

At the end of the course, students will be able to:

- Define the basic objectives of a project, carrying out a preliminary feasibility study; as well as to accurately define the scope of the project that the organization has finally decided on, using social, economic and environmental criteria.
- Identify and plan the various tasks required to implement a project, defining the relevant timeframe and allocation of resources, and also do that using the most appropriate software tools.
- Assess both costs and risks associated with the project; and consistently define the required quality standards, developing tools and methodologies to ensure compliance.
- Propose a viable methodology for monitoring and controlling the project during its execution, including the use of appropriate computer tools.

Furthermore, students must be able to work as a team in planning specific projects, and to comunicate within the team and with the organization, both in the form of oral presentations and written reports, in the different stages of the project planning.

## Learning Outcomes

1. CM36 (Competence) Design data management applications applying the most appropriate software development model to facilitate the development and maintenance of the system with ethical responsibility.
2. KM32 (Knowledge) Identify the principles and models of software development.
3. SM39 (Skill) Analyse the requirements for a data project.

## Content

Unit 0. The field of AI and project management

Unit 1. Basics elements of project management: Major characteristics, project development cycle, approaches to project management

Unit 2. The initial phase of a project.

Unit 3. Project planning and scheduling: the analytical structure of a project and the development of a WBS. PERT and CPM networks: characteristics and use. Critical path, total duration, and slacks for non-critical tasks. Treatment of time uncertainty. Task planning and scheduling charts: Gantt chart. Specific software for time planning and management of projects.

Unit 4. Cost Planning and sustainability: cost estimations for a project. Monetary and intanglible costs.

Unit 5. Quality management and risk management: identification of the relevant quality criteria for a project, and preparation of the project's quality plan. Identification and measurement of possible sources of risk, as well as subsequent planning of sensible responses.

Unit 6. Controlling a project: methodologies to monitor forecasts made in project planning (scope, time, resources, costs, quality): from milestones to the use of standard ad-hoc computer software.

Throughout the development of the subject, various agile project development techniques will be considered (including Scrum, Kanban or Lean) as well as various tools for ideation (canvas, design thinking, prototyping) and IT tools for the assurance of collaborative work and in the management and control of projects

## Activities and Methodology

| Title | Hours | ECTS | Learning Outcomes |
|---|---|---|---|
| Type: Directed | | | |
| A. Theoretical lectures | 18 | 0.72 | |
| B. Classroom problems | 12 | 0.48 | |
| C. Laboratory sessions | 12 | 0.48 | |
| D.Oral presentations and discussion of cases | 8 | 0.32 | |
| Type: Supervised | | | |
| E. Tutorials | 12 | 0.48 | |

| | | |
|---|---|---|
| Type: Autonomous | | |
| F. Independent study | 20 | 0.8 |
| G. Designing, preparing and drafting the course projects | 65 | 2.6 |

Based on PBL, the course combines several techniques to favour formative learning:

- Presentation of basic concepts and standard methodologies commonly used for project management.
- Practical classroom and laboratory classes, with the aim of consolidating its main concepts through the realization of practical cases.
- Teamwork throughout the semester, to define and plan a specific project ideated and proposed at the beginning of the course, which should be based on technological innovation and/or business information systems.
- Tutorials agreed between teachers and each of the work teams (supervised activity) to ensure the proper monitoring and development of the project.
- Oral and written presentations of progress reports of project development.

This approach merges individual learning, essential in any subject of study, with collaborative activities to ensure the quality of the team projects, thus consolidating the learning skills of each one of the team members.

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 |
|---|---|---|---|---|
| Final exam | 40% | 3 | 0.12 | CM36, KM32, SM39 |
| Final technical report of the project worked on during the course | 35% | 0 | 0 | CM36, KM32, SM39 |
| Presentación individual de ejercicios y casos prácticos | 15% | 0 | 0 | CM36, SM39 |
| Presentation of reports related to the developed project | 10% | 0 | 0 | CM36, SM39 |

La evaluación de la asignatura se realizará de forma progresiva y continuada durante el semestre. El sistema de evaluación se basa en las siguientes evidencias de aprendizaje:

- ***Presentación de ejercicios y resolución individual de casos*** propuestos en las sesiones presenciales del curso, o formando parte del aprendizaje autonomo.
- ***Presentación de informes, orales o escritos***, relativos a las diversas fases del proceso de planificación del proyecto específico que desarrollará cada equipo de estudiantes durante el curso.
- ***Presentación de la memoria final (técnica)***, a final de curso, del proyecto específico desarrollado por cada equipo.
- ***Examen final***, en las últimas semanas del semestre, para favorecer la consolidación del conjunto de la materia del curso.

La calificación final de la asignatura se obtendrá de la suma ponderada de las valoraciones de las diversas evidencias, teniendo en cuenta que cada una de les tres componentes citadas tiene un peso específico distinto:

N = 15% (actividades individuales durante el curso) + 10% (presentaciones informes parciales del proyecto) + 35% (memoria final del proyecto) + 40% (examen final)

Será condición necesaria para efectuar este cálculo (1) que cada una de las componentes tenga una puntuación positiva, (2) que la calificación individual de la memoria final de proyecto sea igual o superior a 4.5 puntos, y (3) que la calificación obtenida en el examen final sea igual o superior a 4.0.

Las calificaciones obtenidas de los trabajos realizados durante el curso siempre serán a nivel individual, y no necesariamente coincidirán con la calificación del trabajo en sí, ya que se tendrán en cuenta aspectos individuales comola participación en la resolución y la defensa de los mismos.

Notas importantes sobre la evaluación:

1. Los alumnos que no hayan superado la materia mediante el cómputo anterior, o que no reúnan todas las condiciones para poder hacerlo, tendrán como nota final el valor inferior entre 4.5 y el valor de N anterior. Una nota igual o superior a 3.5 da derecho al alumno a participar en la recuperación que se describe a continuación.

2. Solamente se considerá "No evaluable" un/a estudiante no haya participado en ninguna de las actividades de evaluación de la asignatura.

3. Esta asignatura NO ofrece el sistema de evaluación única.

Use of AI

In this course, the use of Artificial Intelligence (AI) technologies is permitted as an integral part of the development of the assignment, provided that the final result reflects a significant contribution from the student in terms of analysis and personal reflection. The student must clearly identify which parts were generated using such technology, specify the tools used, and include a critical reflection on how these tools influenced the process and the final outcome of the activity. A lack of transparency in the use of AI will be considered academic dishonesty and may result in a grade penalty for the activity or more severe sanctions in serious cases.

Proceso de recuperación

Consistirá en la realització de una prueba el dia previsto por el Centro. En cas de superarla, la calificació final de la assignatura sera de 5.0.

## Bibliography


- Cobb, Anthony T. *Leading Project Teams : The Basics of Project Management and Team Leadership*, SAGE Publications, 2011. *ProQuest Ebook Central*, https://ebookcentral.proquest.com/lib/uab/detail.action?docID=1995175.
- Gido, J. & Clements, J.P. *Successful Project Management*. South-Western, 4th. Edition, 2009.
- Nicholas, J.M. *Project Management for Business and Technology*. *Principles and Practice*. Prentice-Hall, 2nd. edition, 2001.
- Paquette, Paul, and Milan Frankl. *Agile Project Management for Business Transformation Success*, Business Expert Press, 2016. *ProQuest Ebook Central*, https://ebookcentral.proquest.com/lib/UAB/detail.action?docID=4307174.
- Pries, Kim H., and Jon M. Quigley. *Scrum Project Management*, Taylor & Francis Group, 2010. *ProQuest Ebook Central*, https://ebookcentral.proquest.com/lib/UAB/detail.action?docID=589930.

- Rosen, Anita. *Effective IT Project Management : Using Teams to Get Projects Completed on Time and Under Budget*, AMACOM, 2004. *ProQuest Ebook Central*, https://ebookcentral.proquest.com/lib/UAB/detail.action?docID=243019.
- Silvius, Gilbert, et al. *Sustainability in Project Management*, Taylor & Francis Group, 2012. *ProQuest Ebook Central*, https://ebookcentral.proquest.com/lib/UAB/detail.action?docID=906949.


## Software

Free and open source software to be defined based on the interest of the students' teams

## Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.

| Name | Group | Language | Semester | Turn |
|---|---|---|---|---|
| (PAUL) Classroom practices | 711 | English | first semester | afternoon |
| (PLAB) Practical laboratories | 711 | English | first semester | afternoon |
| (PLAB) Practical laboratories | 712 | English | first semester | afternoon |
| (TE) Theory | 71 | English | first semester | afternoon |