Advanced planning: time, cost, resources and time management

Master's degree in: Project Management

Subject: Project work planning

Credits: 6 ECTS

Program: Master in Project Management

Modality: On-campus Full-Time

Semester: First

Type: Mandatory

Language of instruction: English

Academic year: 2025/2026

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1. Presentation

Advanced planning is essential in project management as it allows the anticipation and coordination of critical aspects such as time, cost, necessary resources, and risk analysis. Effective planning ensures that project activities are aligned with the organization's strategic objectives, optimizing resource utilization and minimizing risks associated with uncertainty.

Advanced time and cost planning is fundamental to the success of any project. This involves accurately estimating the timelines and costs for each activity, as well as efficiently scheduling tasks to meet established deadlines. Proper management of time and cost helps prevent budget overruns and delays in project delivery.

Advanced planning also addresses the efficient management of resources required to carry out a project. This includes the appropriate allocation of personnel, equipment, and materials, as well as the optimization of their use throughout the project's life cycle. Proper resource planning ensures that the project has the necessary means for execution, maximizing efficiency while minimizing unnecessary costs.

Uncertainty management is an inherent part of any project, and dealing with it is a crucial aspect of advanced planning. This involves identifying, analyzing, and mitigating potential risks that could affect the project's execution, as well as developing contingency strategies to address unforeseen scenarios. Managing uncertainty allows project managers to anticipate potential obstacles and reduce their impact on project development.

Advanced planning relies on various **tools and approaches**, such as the use of specialized software, scheduling and project control techniques, as well as risk analysis and simulation methods. These tools enable project managers to improve planning accuracy, evaluate alternative scenarios, and make informed decisions to optimize time, cost, resources, and uncertainty management.

By integrating all these aspects, advanced planning becomes a vital process that ensures project success and alignment with organizational goals.

2. Program's learning outcomes

The subject-related learning outcomes are distributed as follows:

2.1. Knowledge

RAT 1	The graduate will be able to describe the projects needed to implement an strategic plan in a company, by means of real cases study.
RAT 2	The graduate will be able to identify the implementation of a quality system in a business project through simulation-based learning.

RAT 3 The graduate will be able to describe the relevance of quality control in a business project's processes and results, through learning based on challenges and case simulations.

RAT 5 The graduate will be able to identify correctly the hiring strategies suitable to the needs of each type of project and business environment, through cooperative learning and/or research.

RAT 6 The graduate will know how to organize the team appropriately for the correct accomplishment of the different phases of each type of project and business environment.

2.2. Skills

RAT 7 The graduate 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.

RAT 8 The graduate will be able to apply digital technologies (at the right time) in his/her field of expertise.

RAT 10 The graduate will be able to design a proper sales process for each type of project.

RAT 11 The graduate will be able to assess the economic feasibility and budgetary control of a project by means of simulated situations.

RAT 12 The graduate will be able to organize a work team in an adequate way in order to ensure the success of the project and the satisfaction of the people involved.

RAT 13 The graduate will be able to modify the communication strategy taking into account the different communication policies that a project may require at any particular moment.

RAT 15 The graduate will be able to apply in an effective way the quality and technological innovation management principles and techniques in projects.

2.3. Competences

RAT 18 The graduate will be able to provide innovative, creative and entrepreneurial solutions in professional situations.

RAT 19 The graduate will be able to evaluate the sustainability and social impact of the proposals presented, with ethical, environmental and professional responsibility.

RAT 20 The graduate will be able to apply the gender perspective in the professional tasks.

RAT 23	The graduate will be able to make a correct plan for the comprehensive management of the economic, material and personal resources invested in the implementation and development of a project in order to optimize them.

3. Subject's learning outcomes

The subject-based learning outcomes for this course are as follows:

RAM 1	The graduate will be able to clearly organize the strategic management of companies and its relationship with project management through the analysis of real cases.
RAM 2	The graduate will be able to effectively use tools that enable investment valuation and selection methods through simulations based on real cases.
RAM 3	The graduate will be able to effectively adapt project financing mechanisms through comparative analysis of different companies and sectors.
RAM 4	The graduate will be able to evaluate projects based on complex financing structures.

4. Contents

- **Topic 1:** New PMBOK7 Domain "Planning"
    - Estimation, accuracy, precision
    - Development approach for project planning

- **Topic 2:** Schedule Management Planning
    - Scheduling and control boards
    - Fast tracking, rapid execution
    - Simulations

- **Topic 3:** Overview of Cost and Resource Areas
    - Defining processes, resources, and responsibilities
    - Quality and change costs, leveling, budgeting
    - Maintaining the project team's focus, communication, and engagement

- **Topic 4:** Techniques for Defining, Sequencing, and Estimating Activity Time and Cost

- Defining activities from the work breakdown structure (WBS)
- Sequencing activities using precedence diagramming methods (PDM)
- Analogous, parametric, and three-point estimates (PERT)
- Range, accuracy, precision, and confidence

- **Topic 5:** Relationship with the Resource Knowledge Area

  - Selection, classification, assignment, and control of human resources
  - Physical resources (materials, equipment, supplies), organizations, and financial resources

- **Topic 6:** Scheduling Methods: Critical Path vs. Critical Chain

  - The Critical Path
  - The Critical Chain

- **Topic 7:** Techniques for Schedule Monitoring and Control

  - Effective measures with key performance indicators (KPIs)
  - Earned Value Method (status and forecasts)
  - Burn rates, baseline thresholds

- **Topic 8:** Practical Workshop on Microsoft Project

  - Functionalities
  - Uses
  - Tools

- **Topic 9:** Risk Management

  - Techniques for risk identification and logging
  - Qualitative (prioritization) and quantitative analysis (reserves)
  - Designing response plans. Anticipation and contingency.
  - Practical workshop on risk modeling using @RISK (Monte Carlo analysis)

5. Methodology

The methodology applied to this subject, framed within the educational model of EAE Business School, LifEd, is detailed in the following table:

ON CAMPUS FULL TIME MODALITY		
Learning Outcomes	**Teaching Methodology**	**Training Activities**
Knowledge	Lecture	Conferences
	Presentation sessions	Student presentations

	Audiovisual-based learning	Analysis of audiovisuals
	Tutorials	Meetings to resolve doubts Follow-up meetings
Skills	Project work	Problem-solving Information searching and processing Presentation of reports and/or work
	Case-based learning	Information searching and processing Problem-solving
Competencies	Game-based learning	Challenges
	Inquiry-based learning	Research tasks
	Project work	Report preparation Presentation of reports or work

6. Grading system

Continuous assessment

Grading system	Weight
Block 1: Exercises, Problems, Report Preparation, Assignments, Presentations	40 %
Block 2: Participation and Oral Presentations	20 %
Block 3: Final Evaluation Test	40 %

Block 1 will consist of:

- Two individual evaluable activities. 10% each.
- Two group projects or reports. 10% each.

Block 2 will consist of:

- Participation and oral presentations – 20%.

Block 3 will consist of:

- An exam - 40%.

The final grade for the course will be obtained by weighting the three blocks. The minimum weighted grade required to pass is 5.0.

If the student fails Block 1 or Block 3 (or both) with a grade lower than 5.0, they may retake that block or blocks. This grade will average with the other blocks, and the maximum final grade the student can receive is 5.0.

If the student is unable to attend the initial evaluation, and can provide a justified reason (see regulations of the University of Lleida), they may take the exam on the date set for recovery.

Students who do not attend evaluative activities with a weight exceeding 50% will receive a general course grade of “Not presented.”

Alternative Evaluation

The single evaluation consists of a single exam that accounts for 100% of the course. The exam, and therefore the course, is passed with a grade of 5 out of 10 in this final test. If a grade lower than 5.0 is obtained, the student has the right to a recovery exam.

To opt for the single evaluation, it is necessary to send a written request to the coordination during the first 15 business days of the course. The procedure to follow to opt for this single evaluation is established in the specific rules of EAE.

Plagiarism is a fraudulent activity that can lead to severe penalties, both academic and legal. Academic honesty is one of the pillars of the educational commitment of the School, and the members of its teaching community are especially aware and prepared to detect such actions. Given the difficulty often involved in conceptualizing plagiarism, it has been deemed appropriate to clearly define its content and scope in these regulations and policies.

Plagiarism is understood as the appropriation of works or other people's work by passing them off as one’s own; that is, without explicitly crediting their origin. Plagiarism can consist of the unauthorized total or partial copying of someone else's work, or presenting the copy as an original work, impersonating the true author. Some examples of plagiarism are:

- Submitting someone else's work as if it were your own, regardless of whether the copy is total or partial.
- Paraphrasing a text by rephrasing it with other words, but making small changes in the language to disguise it and without citing sources.
- Buying or obtaining a work and presenting it as one's own.
- Relying on an idea or phrase from another person to write a new paper without citing the author of the work.

As established in Article 10 of the Academic Code of Conduct for Students at EAE Barcelona, without prejudice to the academic sanctions resulting from its application, the Academic Commission will promote the legal actions that correspond in case plagiarism could violate applicable regulations regarding intellectual property.

7. Bibliography

- Project Management Institute, A Guide to the Project Management Body of Knowledge (PMBOK® Guide) - 7th Edition, Project Management Institute Inc., Newtown Square, Pennsylvania, USA, 2021.
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- PMI Standards Committee, Practice Standard for Scheduling – Third Edition. Project Management Institute, Newtown Square, Pennsylvania, USA, 2019.
- PMI Standards Committee, Practice Standard for Estimating – Second Edition. Project Management Institute, Newtown Square, Pennsylvania, USA, 2019.
- PMI Standards Committee, The Standard for Earned Value Management. Project Management Institute, Newtown Square, Pennsylvania, USA, 2019