

**COURSE DATA****Data Subject**

Code	34817
Name	Project management
Cycle	Grade
ECTS Credits	6.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
1402 - Degree in Telecommunications Electronic Engineering	School of Engineering	3	Second term

Subject-matter

Degree	Subject-matter	Character
1402 - Degree in Telecommunications Electronic Engineering	18 - Project management	Obligatory

Coordination

Name	Department
DEDE GARCIA-SANTAMARIA, ENRIQUE	242 - Electronic Engineering

SUMMARY

The course Project Management is part of the obligatory subjects of the third year of the Degree in Electronic Engineering in Telecommunications, and its overall objective is that the students to obtain the capability to adequately apply all the knowledge previously acquired in the elaboration, development and evaluation of projects and reports. For this purpose, the application of the appropriate methodology and the basic principles of economy, management, quality, and business organization, as well as the legislation, regulation and standardization of the Telecommunications Engineering field will be emphasized.

This is a four-monthly course that is taught during the second four-month period of the degree. The study plan consists of a total of 6 ECTS credits. The course is focused on the development of practical skills that the engineer will apply in his professional career as a manager or member of a project team. Such skills include the application of technical knowledge in real cases, division of tasks, or management of human and material resources. The Common Telecommunications Infrastructures, as well as other types of projects related to the degree, will be particularly stressed.



The course has a theoretical-practical character with several practices that will serve to establish the theoretical knowledge, and exercises in class in which the students will develop their creativity and their abilities related to the management and communication. In this way, students are expected to improve their ability to work in a team, and their oral and in writing skills.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

The course, given its general nature, does not need a specific background, although it is recommended to have completed the courses "Engineering, University and Business and Society," in order to have an initial perception of the world of the Company. On the contrary, it does provide very direct connections in areas in which the technical knowledge is embodied in a project.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1402 - Degree in Telecommunications Electronic Engineering

- G8 - Knowledge and application of basic elements of economics and human resource management, project organization and planning, and legislation, regulations and norms in telecommunications.
- G9 - Ability to work in a multidisciplinary environment and in a multilingual group and to communicate, in writing and orally, knowledge, procedures, results and ideas related to telecommunications and electronics.
- G6 - Ability in the handling of specifications, regulations and norms of compulsory compliance.
- R2 - Ability to use communication and computer applications (offmatics, databases, advanced calculation, project management, visualization, etc.) to support the development and exploitation of telecommunications and electronics networks, services and applications.
- G1 - Ability to write, develop and sign projects in the field of Telecommunication Engineering aimed - according to the knowledge acquired in section 5 of CIN/352/2009 regulation - at the conception and the development or the exploitation of networks, services and applications of telecommunications and electronics.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

1. Understand the basic principles of Management and Project Management in the field of telecommunications engineering, electronic industry, and be able to use them to create, analyze and select plausible alternatives capable of responding to the problems of their area of work (G8)



2. Determine the appropriate tools for achieving the main goals of quality, cost and time sought in project management (G8)
3. Know the different types of telecommunications projects (G8)
4. Knowing the technical feasibility analysis (G8)
5. Being able to document a project both from the technical side and management (G8,G1)
6. Know the organizational structure of a company (G8)
7. Learn the techniques of planning and project control (G8)
8. Know the procedure for certification of electronic products and procedures for obtaining the CE mark(G8,G6)
9. Meet the professional organization and basic track procedures. Know de Law (G8)
10. Be able to design a Common Telecommunications Infrastructure, as well as write the project properly (G8).

1.

DESCRIPTION OF CONTENTS

1. The project

- 1.1.- The concept of an industrial project
- 1.2.- The context of a Telecommunication project
- 1.3.- Characterization of external projects
- 1.4.- Characterization of internal projects
- 1.5.- The Quality Plan for the management of an industrial projectThe

2. The draft

- 2.1.- The management of an industrial project
- 2.2.- The specifications of an industrial project
- 2.3.- The basic techniques of project planning
- 2.4.- Advanced techniques of project planning
- 2.5.- Feasibility studies and project risk
- 2.6.- The economic evaluation of a project
- 2.7.- The decision theory



3. The project

- 3.1.- The implementation of industrial projects
- 3.2.- Validation of industrial projects
- 3.3.- The control projects
- 3.4.- Project closure

4. The professional activity

- 4.1.- The salaried employment
- 4.2.- The self-employment

5. Practical Example: Common Telecommunication Infrastructures

- 5.1. Introduction to ICTs
- 5.2. Magnitudes and units
- 5.3. Services offered
- 5.4. Design of ICTs
- 5.5. Quality parameters
- 5.6. Components
- 5.7. Example
- 5.8. Presentation of the report

6. Laboratory

The objective of the laboratory is to apply the concepts taught in theory in practical cases by using, specific tools for project management (MSProject or Gantt Project) or Microsoft Office (Word, Excel, Power Point). The laboratory is divided into the following practices (which may last more than one session):

- 1. GANTT planning with unlimited resources
- 2. GANTT planning with limited resources.
- 3. Preparation of reports.
- 4. Design of a Common Telecommunications Infrastructure.
- 5. Preparation of a job interview.



WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Laboratory practices	20,00	100
Classroom practices	10,00	100
Development of group work	25,00	0
Preparation of evaluation activities	25,00	0
Preparing lectures	10,00	0
Preparation of practical classes and problem	15,00	0
Resolution of case studies	15,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

The course is structured around theory classes, practical classes, workshop seminars and practice classes.

Theoretical activities will be exposed through the theory classes (T). Here, the lecture class model will be used. The professor will present and/or explain the contents of each issue impacting on key aspects for understanding.

The part of the **seminar-workshop (S)** will consist of groups of 3 to 5 students developing a draft project whose subject will be freely chosen by them. The students will have to organize themselves to analyze the state of art of the chosen topic and to carry out the different tasks involved in the draft project (management, sales strategy, necessary resources, budget...). At the end of the course the group will present a report with all the work carried out and will make a presentation to the rest of the class. Following the presentation there will be a round of questions and discussion with the teacher and other the students. At the end of all presentations the students will choose the best draft and will explain the reasons for their choice.

For the **laboratory sessions (L)**, the different activities (introducing the practice, development, experimentation, and analysis) will be appropriately scheduled. Practice scripts will be provided in advance, and students will carry out the practice under the supervision of the professor.

EVALUATION

The knowledge acquired by the student can be evaluated in the following ways: through the work carried during the course (Continuous Evaluation System) or through a final exam (Single Evaluation System).



Continuous Assessment System

Through this system, those students who regularly participate in the training activities will be assessed, evaluating class attendance, the development of the draft project and the laboratory activities.

To be entitled to this evaluation system, **at least 80% of the theory classes must be attended and it will be compulsory to attend the laboratory classes, the seminar-workshop and the presentation** of each of the draft projects.

Under this system the final mark will be calculated as follows:

- The draft project will count for **75 %** of the final mark, of which 50 % will correspond to the report and 25 % to the oral presentation.
- The Laboratory will count **25 %** of the final grade. This will be obtained as the weighted average of all practices.

A minimum grade 4 in each of the parts will be necessary to be able to make an average.

Unique Evaluation System

Students who have failed the continuous assessment or have not attended class regularly may take a final exam on the date set out in the academic calendar. This exam will consist of

- A theory exam, which will weight **75 %** of the final mark and will consist of theoretical and practical aspects of the theory classes.
- Lab practice. Students who have not regularly attended the laboratory must present all practices to the corresponding professors. The weight of the practices will be a **25 %** of the final grade.

A minimum grade 4 in each of the parts will be necessary to be able to make an average.

REFERENCES

Basic

- Referencia b1: Pereña, J. "Dirección y Gestión de Proyectos". Ed. Díaz de Santos (1991).

Referencia b2: Gómez, J. F; Coronel, A.J; Martinez de Irujo, L; Lorente, A. "Gestión de proyectos". FC Editorial. Madrid, 2000. ISBN 8428317747.

Referencia b3: Lock, D. "Gestión de proyectos". Ed. Paraninfo. Madrid, 1994. ISBN 8428317747.

Referencia b4: Moreno E.F.. "Infraestructuras comunes de telecomunicaciones en viviendas y edificios" Ed. McGraw Hill (2014)



Additional

- Referencia c1: SERCOBE Gestión de la I+D+i- Normas UNE (2008) ISBN 978-84-8143-567-2.

Referencia c2: Amándola, L.J. Gestión de Proyectos de Manufacturera Editoril UPV, ISBN 84-9705-311-7

Referencia c3: Reglamento Electrotécnico de Baja Tensión. Ed. Paraninfo (1997) ISBN 84-283-2109-4