

61078 - Telecommunication project management

Syllabus Information

Academic year: 2024/25

Subject: 61078 - Telecommunication project management

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 658 - Master in Telecommunications Engineering

ECTS: 6.0

Year: 1

Semester: Second semester

Subject type: Compulsory

Module:

1. General information

The objective of the subject is to provide the student with the knowledge and methodologies necessary to understand, analyse, design, develop and manage telecommunications systems projects.

The subject focuses on the understanding of general project theory and its application to telecommunication engineering projects. Particularly, it will focus on methodologies of creation, direction, coordination, and technical and economic management of projects in the field of Telecommunication Engineering; analysis of R+D+i in telecommunication engineering; entrepreneurship in the ICT sector and the development of multidisciplinary projects.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of United Nations (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning results of the subject will contribute to some extent to the achievement of Objective 4.4 (Goal 4), Objective 8.2 (Goal 8) and Objectives 9.5 and 9.c (Goal 9).

2. Learning results

CO_02: Knowledge, understanding and ability to apply the necessary legislation in the exercise of the profession of Telecommunication Engineer.

HA_01: Ability to plan, calculate and design products, processes and installations in all areas of telecommunication engineering.

HA_02: Ability to manage works and installations of telecommunication systems, complying with current regulations, ensuring the quality of the service.

HA_03: Ability to manage, plan and supervise multidisciplinary teams.

HA_04: Capacity for mathematical modelling, calculation and simulation in technological centres and company engineering, particularly in research, development and innovation tasks in all areas related to Telecommunications Engineering and related multidisciplinary fields.

HA_05: Capacity for the elaboration, strategic planning, direction, coordination and technical and economic management of projects in all areas of Telecommunication Engineering following quality and environmental criteria.

HA_06: Capacity for general management, technical management and management of research, development and innovation projects in companies and technology centres.

HA_07: Capacity for the start-up, direction and management of manufacturing processes of electronic and telecommunications equipment, guaranteeing the safety of people and goods, the final quality of the products and their approval.

HA_08: Ability to apply acquired knowledge and solve problems in new or unfamiliar environments within wider and multidisciplinary contexts, being able to integrate knowledge.

HA_09: Ability to apply the principles of economics and human resources and project management, as well as telecommunications legislation, regulation and standardisation.

HA_24: Capacity for the integration of technologies and systems specific to Telecommunication Engineering, with a generalist character, and in wider and multidisciplinary contexts such as bioengineering, photovoltaic conversion, nanotechnology, telemedicine.

HA_25: Capacity for the elaboration, direction, coordination, and technical and economic management of projects on: telecommunication systems, networks, infrastructures and services, including the supervision and coordination of the partial projects of their annexed works; common telecommunication infrastructures in buildings or residential areas, including projects on digital home; telecommunication infrastructures in transport and environment; with their corresponding energy supply installations and evaluation of electricity emissions; telecommunication infrastructures in transport and environment; with their corresponding energy supply installations and evaluation of electricity emissions.

CP_06: Permanent self-learning

CP_07: Ability to communicate (orally and in writing) conclusions - and the knowledge and rationale underpinning them - to specialist and non-specialist audiences in a clear and unambiguous way.

3. Syllabus

Topic 1. The project: the PMI model

Topic 2. Managing the context

Topic 3. Managing the scope

Topic 4. Managing time

Topic 5. Managing costs

Topic 6. Managing risks

Topic 7. Managing quality

Topic 8. Other methodologies: agile and PM2

Topic 9. Telecommunications projects

Topic 10. R&D Projects

Topic 11. European projects

Topic 12. Basis of entrepreneurship

Competencies of the PM:

- Leadership
- Team management and conflict management
- Information management
- Oral and written communication
- Negotiation techniques

4. Academic activities

Theory classes. Presentation by the teacher of the main contents of the subject, combined with the active participation of the students (30 hours).

Problems and cases. Small works to be done in groups and tutored by the teacher. (30 hour)

Tutored practical work. Completion of a practical work in group tutored by the teacher, based on the contents of the subject.

Assessment: Set of theoretical and practical written tests and presentation of reports or papers used in the evaluation of the student's progress. Details can be found in the section corresponding to the assessment activities.

5. Assessment system

The student must demonstrate achievement of the intended learning results through the following assessment activities:

Tutored work (E1)

The tutored assignments represent 75% of the final grade. During this activity, students will be asked to produce an engineering project related to the contents of the subject, which they will have to do as a group. Each group should understand the requirements of the project, evaluate possible alternative solutions and finally implement the one they consider most appropriate. The resulting project of each group must consist of a report that will be delivered and defended by its members through an oral presentation on the dates established by the teachers. The quality of the solution with respect to the initial requirements and the degree of its justification will be evaluated.

In addition, the originality of the solutions, the ability to work in a group, to coordinate the work and to transmit the relevant information orally and in writing will be evaluated, since the work done will be presented through a common report to the group. There will also be an oral group presentation and defence of the project.

The test is divided into two parts:

- - E1.1. Report: 80% of the grade of the tutored work.
- - E1.2. Presentation and personal evaluation: 20% of the grade of the tutored work.

The student must obtain a grade higher than 6 out of 10 (E1) in the work to pass the subject.

Exercises (E2)

Throughout the semester, students will be required to perform certain in-class exercises related to the subject. There are five works that will require a previous analysis by the students based on the teaching material provided by the teacher. They will be developed during the classes in groups of two people. Each of the works will have the same valuation.

CF: Final grade of the subject.

The final grade (CF) of the subject will be the result of the following expression:

$$CF = 0.75 * (0.8 * E1.1 + 0.2 * E1.2) + 0.25 * (E2)$$

For those students who do not pass the subject, there will be a global test in each of the call for exams established throughout the academic year. Dates and times will be determined by the Centre.

6. Sustainable Development Goals

- 4 - Quality Education
- 8 - Decent Work and Economic Growth
- 9 - Industry, Innovation and Infrastructure