Program	59EC – Communications Electronic Engineering B. Eng. 59SC – Telecommunications Systems Engineering B. Eng. 59SO – Sound and Image Engineering B.Eng. 59TL – Telematics Engineering B. Eng.

Course number and name	
Number	595000037, 595000336, 595000136, 595000236
Name	Project Management
Semester	S8 [(February-June)]

Credits and contact hours	
ECTS Credits	4,5
Contact hours	45

Coordinator's name	Martínez Núñez, Margarita [margarita.martinez@upm.es]

Specific course information

Description of course content

It is a comprehensive approach to project management that focuses on how projects contribute to the strategic objectives of the organization. It includes the selection of the best projects for the organization strategy and all the management techniques and processes that allow closing the life cycle of these projects. The aim is to understand the role of a project in the organization and the review of the techniques and tools in project management, as well as the interpersonal skills necessary to be able to coordinate the project until its completion.

On the other hand, it aims, in the most practical way possible, to promote labor insertion through seminars about employability to foster the entrepreneurial spirit in students.

The course is divided into 5 blocks. The first blocks are theoretical and include a practical implementation. The last block is devoted to the seminars about the labor market.

List of topics to be covered

1. THE ENGINEERING PROJECT
    - 1.1. Introduction to project management
        - 1.1.1. Practice: Project and Analysis of the Environment
    - 1.2. Content of a project: the drafts:
        - 1.2.1. Review and analysis of drafts
    - 1.3. Content of an Engineering project: The basic documents of the project
        - 1.3.1. Practice: Review and elaboration of an engineering project
2. THE INITIATION OF THE PROJECT AND ITS FEASIBILITY STUDIES
    - 2.1. The creation of the idea and creativity
        - 2.1.1. Practice: Ideas for entrepreneurship

2.2. Market Research: Commercial Viability
2.2.1. Practice: A market and entrepreneurship study
2.3. Study of Technological Viability
2.3.1. Practice: Technological prospecting and entrepreneurship
2.4. The Economic Viability of the Project
2.4.1. Practice: Financial and investment decisions
3. DECISION MAKING ON PROJECTS
3.1. Theory 8.- Decision-making and problem-solving methodologies
3.1.1. Practice: Justification analysis and alternative selection
4. PROJECT MANAGEMENT METHODOLOGY
4.1. Planning, programming and control of activities
4.2. Agile methodologies in project management
5. PROFESSIONAL ENVIRONMENT OF THE PROJECT.
5.1. Entrepreneurship and freelance exercise of the profession.
5.2. The company: Consulting and productive activity.
5.3. The company: SME and productive activity
5.4. Postgraduate and research

Prerequisites or co-requisites

- Economics and Business Management
- Science, Technology and Society

Course category in the program

_ X _ R (required)	**__ E (elective)** *(elective courses may not be offered every year)*

Specific goals for the course

Specific outcomes of instruction

- RA172 - Knowledge of the fundamentals of a project.
- RA174 - Knowledge of the main techniques of evaluation of projects (VAN, IR, TIR)
- RA173 - Knowledge of the peculiarities of a telecommunication project.
- RA532 – To choose the right alternative which better fulfills the aims thanks to the application of decision making techniques.
- RA535 – To identify the rules and regulations applied to engineering projects within a specific field.
- RA529 – To compare the different types of organic organizational structure of a company focused in the development of projects.
- RA530 – To look for the necessary information for the engineering project design.
- RA536 – To define the most common expressions used in the documentation of a technical project.
- RA534 – To correctly write the content of a technical project in accordance to the minimum requirements by law.
- RA175 – Knowledge of the main programming techniques of projects (GANT, PERT).
- RA185 – Knowledge of the human system in a company.
- RA526 – To prepare the technical presentations for the oral defense of an engineering project using the proper audiovisual media.

- RA528 – To describe the main functions and assigments of a project manager.
- RA533 – To differentiate the types of activities related to R&D&I: basic and applied research, technological development and research innovation.
- RA531 – To evaluate the viability of an engineering project from a technical, environmental, economic and financial point of view.
- RA176 – Familiarity with project documents: report, blueprints, bid specifications, budget.
- RA527 – To draw time charts with computing tools for planning and programming.

Further reading and supplementary materials

– M. Martínez, W. Pérez & F. del Río. Introducción a la gestión de proyectos. La iniciación del Proyecto y sus estudios de viabilidad. El proyecto de ingeniería. Metodología de la gestión de proyectos. ETSIST, febrero de 2013.
– S. Hernandez & A Pulido. Fundamentos de gestión empresarial. Ed. Mac Graw Hill, Madrid, 2011.
– G. M. Horine. Manual imprescindible de gestión de proyectos. Ed. Anaya, Madrid, 2005.
– J. Pereña Brand. Dirección y gestión de proyectos. Ed. Díaz de Santos, Madrid, 1996.
– G. Martínez Montes & E. Pellicer Armiñana. Organización y gestión de proyectos y obras. Ed. McGraw Hill, Madrid, 2007.
– I. Morilla Abad. Guía metodológica y práctica para la realización de proyectos. Servicio de Publicaciones del Colegio de Ingenieros de Caminos, Canales y Puertos, Madrid, 2001.
– E. Pellicer Armiñana, A. Sanz Benlloch & J. Catalá Alís. El proceso proyecto-construcción. Ed. Universidad Politécnica de Valencia, Valencia, 2004.
– N. Sapag Chain & R. Sapag Chain. Preparación y evaluación de proyectos. Ed. McGraw Hill Interamericana, Santiago de Chile, Chile, 2000.
– Project Management Institute. (2013). A Guide to the Project Management Body of Knowledge (PMBOK® Guide). Project Management Institute, Incorporated.
– Managing Successful Projects with PRINCE2: 2009 Edition (Office of Government Commerce (OGC).
– Moodle.