

Academic Year: ( 2023 / 2024 )

Review date: 05-06-2023

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: REVILLA TORREJON, ANTONIO JAVIER

Type: Electives ECTS Credits : 6.0

Year : Semester :

**REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)**

No prerequisites.

**OBJECTIVES**

By the end of this subject, students will be able to have:

1. Knowledge and understanding to develop, execute and manage industrial engineering projects, according to good practices, standards and regulations.
2. Awareness of the wider multidisciplinary context of engineering.
3. The ability to apply their knowledge and understanding to analyse engineering products, processes and methods.
4. The ability to apply their knowledge and understanding to develop and realise designs to meet defined and specified requirements.
5. The ability to conduct searches of literature, and to use data bases and other sources of information.
6. An awareness of the non-technical implications of engineering practice.
7. Function effectively as an individual and as a member of a team.
8. Demonstrate awareness of the health, safety and legal issues and responsibilities of engineering practice, the impact of engineering solutions in a societal and environmental context, and commit to professional ethics, responsibilities and norms of engineering practice.
9. Demonstrate an awareness of project management and business practices, such as risk and change management, and understand their limitations.

**DESCRIPTION OF CONTENTS: PROGRAMME**

1. Introduction to Project Management
  - a. Project Lifecycle
  - b. The Project Manager
  - c. Essential elements for any successful project
  - d. Project methodologies
  - e. Standards, professional associations. PMI. PMBOK
2. Project planning
  - a. Defining a project
  - b. Developing the Work Breakdown Structure (WBS)
  - c. Duration and workload estimations
  - d. Task sequencing
  - e. Project calendar: developing the Project Schedule
  - f. Determining the Project Budget: resources restrictions and costs
  - g. Resource-bound project scheduling. Critical Chain approach
3. Project execution
  - a. Leading a project
  - b. Managing Project communications
  - c. Managing expectations
  - d. Project Team Performance
4. Project control
  - a. Managing Project changes
  - b. Managing Project quality
  - c. Managing Project risks
  - d. Managing Project costs. Earned Value Management (EVM)
5. Software for Project Management
6. Project Management in the digital age
  - a. Virtual projects

## b. Virtual Project Teams

### LEARNING ACTIVITIES AND METHODOLOGY

Lectures, exercises, practical sessions, cases and assignments to be carried out by the students and discussed during the sessions, complementary readings.

### ASSESSMENT SYSTEM

#### FIRST ATTEMPT:

60% Final written exam

40 % Continuous assessment: case studies and team project

#### RESIT (SECOND ATTEMPT):

Any students who do not pass the module in their first attempt will have the opportunity to re-sit the exam, in which case:

1. If the student completed the continuous assessment: marks will be calculated as per the rules for the first attempt. However, students will have the right to be graded solely according to their marks in the second attempt, should this option be more favourable to them.

2. If the student did not complete the continuous assessment: marks will be 100% based on the resit exam.

<b>% end-of-term-examination:</b>	60
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<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	40
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### BASIC BIBLIOGRAPHY

- Project Management Institute Guía de los Fundamentos para la Dirección de Proyectos (Guía PMBok), Newtown Square, PA: Project Management Institute, 2017
- Rodrigo Raya, Domínguez, M. del C., & Campo Arranz, R. Gestión de Proyectos, Madrid : RA-MA Editoria, 2014

### ADDITIONAL BIBLIOGRAPHY

- Kerzner, H. Project management: a systems approach to planning, scheduling and controlling, John Wiley & Sons, 2006