

Academic Year: ( 2023 / 2024 )

Review date: 28-04-2023

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: REVILLA TORREJON, ANTONIO JAVIER

Type: Compulsory ECTS Credits : 3.0

Year : 4 Semester : 2

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

No prerequisites.

**SKILLS AND LEARNING OUTCOMES**

CB1. Students have demonstrated possession and understanding of knowledge in an area of study that builds on the foundation of general secondary education, and is usually at a level that, while relying on advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study

CB2. Students are able to apply their knowledge to their work or vocation in a professional manner and possess the competences usually demonstrated through the development and defence of arguments and problem solving within their field of study.

CB3. Students have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgements which include reflection on relevant social, scientific or ethical issues.

CG1. Ability to solve problems with initiative, decision-making, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of Industrial Engineering.

CG2. Knowledge and skills to organise and manage projects. Knowledge of the organisational structure and functions of a project office.

CG3. Ability to design a system, component or process in the field of Industrial Technologies to meet the required specifications

CG4. Knowledge and ability to apply current legislation as well as the specifications, regulations and mandatory standards in the field of Industrial Engineering.

CG6. Applied knowledge of company organisation.

CG7. Knowledge and ability to analyse and assess the social and environmental impact of technical solutions, and to apply environmental and sustainability technologies.

ECRT12. Knowledge and skills adequate to organise and manage companies.

ECRT13. Knowledge of management information systems, industrial organisation, production and logistics systems and quality management systems.

RA1. Knowledge and understanding: Have basic knowledge and understanding of science, mathematics and engineering within the industrial field, as well as knowledge and understanding of Mechanics, Solid and Structural Mechanics, Thermal Engineering, Fluid Mechanics, Production Systems, Electronics and Automation, Industrial Organisation and Electrical Engineering.

RA2. Engineering Analysis: To be able to identify engineering problems within the industrial field, recognise specifications, establish different resolution methods and select the most appropriate one for their solution

RA3. Engineering Design: To be able to design industrial products that comply with the required specifications, collaborating with professionals in related technologies within multidisciplinary teams.

RA4. Research and Innovation: To be able to use appropriate methods to carry out research and make innovative contributions in the field of Industrial Engineering.

RA5. Engineering Applications: To be able to apply their knowledge and understanding to solve problems and design devices or processes in the field of industrial engineering in accordance with criteria of cost, quality, safety, efficiency and respect for the environment.

RA6. Transversal Skills: To have the necessary skills for the practice of engineering in today's society.

**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

- Project concept
- Project management methodology
- Project phases
- Project planning and control
- Project evaluation
- Project supply management
- Project organization types
- Classic documentary project organization
- Organizational structure and functions of a project office

#### 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

60% Final written exam (students must achieve a mark of 4 out of 10 in the exam to pass the module)

40 % Continuous assessment: case studies and team project

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

#### 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