

Academic Year: (2024 / 2025)

Review date: 29-04-2024

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: REVILLA TORREJON, ANTONIO JAVIER

Type: Compulsory ECTS Credits : 3.0

Year : 4 Semester : 1

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.

CB4. Students should be able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.

CB5. Students will have developed the learning skills necessary to undertake further study with a high degree of autonomy.

CG1. Analyze, formulate and solve problems with initiative, decision-making, creativity, critical reasoning skills and ability to efficiently communicate and transmit knowledge, skills and abilities in the Energy Engineering field

CG3. Acquire the abilities to draft, sign and develop projects in the area of energy engineering for construction, renovation, repair, preservation, demolition, manufacture, installation, assembly or utilization of: structures, mechanical equipment and energetic facilities and to represent and understand technical documentation.

CG5. Acquire the ability to lead and organize energy engineering project activities.

CG6. Being able to plan the safety implantation and inspection, risks prevention and quality system within a project.

CG7. Assess, control, and reduce the social and environmental impact of projects and facilities within the field of energy engineering.

CG8. Know and deal with current legislation in addition to mandatory specifications, regulations and norms within the energy engineering field.

CG9. Acquire the ability to organize and plan within a company as well as in other institutions and organizations and knowing human resources management and project planning, programming and control in such sphere.

CG10. Being able to work in a multi-lingual and multidisciplinary environment

CE16 Módulo CRI. Knowledge of the organizational structure and functions of a project office.

CT1. Ability to communicate knowledge orally as well as in writing to a specialized and non-specialized public.

CT2. Ability to establish good interpersonal communication and to work in multidisciplinary and international teams.

CT3. Ability to organize and plan work, making appropriate decisions based on available information, gathering and interpreting relevant data to make sound judgement within the study area.

CT4. Motivation and ability to commit to lifelong autonomous learning to enable graduates to adapt to any new situation.

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

- RA1.1 knowledge and understanding to develop, execute and manage electrical engineering projects, according to good practices, standards and regulations
- RA1.4 awareness of the wider multidisciplinary context of engineering.
- RA2.2 the ability to apply their knowledge and understanding to analyse engineering products, processes and methods;
- RA3.1 the ability to apply their knowledge and understanding to develop and realise designs to meet defined and specified requirements;
- RA4.1 the ability to conduct searches of literature, and to use data bases and other sources of information;
- RA5.4 an awareness of the non-technical implications of engineering practice.
- RA6.1 function effectively as an individual and as a member of a team;
- RA6.3 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;
- RA6.4 demonstrate an awareness of project management and business practices, such as risk and change management, and understand their limitations.

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

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

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