



1. General information

Course: ENGINEERING PROJECTS**Type:** CORE COURSE**Degree:** 351 - UNDERGRADUATE DEGREE PROG. IN MECHANICAL ENGINEERING (ALM)**Center:** 106 - SCHOOL OF MINING AND INDUSTRIAL ENGINEERING**Year:** 4**Main language:** English**Use of additional languages:****Web site:****Code:** 56329**ECTS credits:** 6**Academic year:** 2023-24**Group(s):** 56 58**Duration:** First semester**Second language:** Spanish**English Friendly:** N**Bilingual:** Y**Lecturer:** EMILIANO ALMANSA RODRIGUEZ - Group(s): 58

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2. Pre-Requisites

In order for students to achieve the learning objectives described, it is highly recommended that they have passed the subjects of the previous courses that allow them to have an overall idea of the course, especially those in the field of technology and management related to the calculation, design, development and evaluation of an engineering project. It is also advisable to have knowledge of English, office automation and computer-aided design software, at least at a basic level.

3. Justification in the curriculum, relation to other subjects and to the profession

This is a discipline and a subject that is different from those taught throughout the degree course; it can be said to be atypical within the group of subjects, but nevertheless very typical within the engineering profession. It is a very formative subject, in which the student has to work in a team, has to dedicate himself to it, and in which he can get a glimpse of what his profession will be like. It is not just a question of the student learning specific jobs that could be carried out during the course; it is a question of learning methods, a way of working, a way of doing things that will allow them to carry out other different specific jobs. It is even intended that they acquire certain qualities, a way of behaving and, why not say it, a temperament that is ideal for working in the world of project engineering.

4. Degree competences achieved in this course

Course competences

Code	Description
A0	Promote respect, Human Rights and the principles of universal accessibility and design for everyone in accordance with the provisions in the final part of Law 51/2003, of 2 December, Equal Opportunities, non-discrimination and universal accessibility for disabled people.
A02	To know how to apply knowledge to work or vocation in a professional manner and possess the competences that are usually demonstrated by the formulation and defence of arguments and the resolution of problems in the field of study.
A03	To have the capability to gather and interpret relevant data (normally within the area of study) to make judgements that include a reflection on themes of a social, scientific or ethical nature.
A07	Knowledge of Information Technology and Communication (ITC).
A08	Appropriate level of oral and written communication.
A09	Ethical and professional commitment.
A10	Ability to produce and develop projects in the field of industrial engineering and automation aimed at, and in accordance with the knowledge acquired as established in section 5 of Order CIN/351/2009, the construction, remodelling, repair, conservation, demolition, manufacturing, installation, assembly or use of: structures, mechanical equipment, power installations, electrical and electronic installations, industrial plants and installations and processes of manufacture and automatization.
A11	Ability to manage engineering project activities described in the previous competency.
A16	Ability to analyse and evaluate the social and environmental impact of technical solutions.
A18	To have organization and planning skills used in businesses and other institutions and organizations.
A19	Ability to work in a multilingual and multidisciplinary environment.
C12	Knowledge and ability to organize and manage projects. To be familiar with the structural organization and functions of a project office.
CB01	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
CB05	Have developed the necessary learning abilities to carry on studying autonomously
	Ability to take the initiative to solve problems, take decisions, creativity, critical reasoning and ability to communicate and transmit

CG04	knowledge, skills and abilities in Mechanical Engineering.
CG05	Knowledge to undertake measurements, calculations, evaluations, appraisals, studies, give expert opinions, reports, work plans and similar tasks.
CG06	Ability to work to specifications and comply with obligatory rules and regulations.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Knowledge of the different tasks carried out in a project office

Ability to analyze and compare different alternatives put forward from the economic point of view of a project

Ability to design, write and manage all of the documents that make up the structure of an industrial project or any technical document that this type of professional has to produce. Fundamental documents: reports, plans, specifications, budgets, health and safety documents, environmental documents, control of deadlines and times.

Ability to express and defend ideas, problems and solutions in the field of engineering projects

Ability to manage any type of project

Understand and interpret the importance of current regulations and legislation applied to industrial engineering works and their implementation in industrial projects

Know the general aspects related to environmental and sustainable technologies

Know all the functions of the works' management, their functions and their responsibilities

Knowledge of the main information applications used in the production, processing and control of projects

Awareness of the necessity to adapt engineering projects to ensure the least damage possible to the surroundings and environment

6. Units / Contents

Unit 1: Introduction to the project

Unit 2: Documents. Content and preparation

Unit 3: Economic and financial evaluation

Unit 4: Project planning, programming and control

Unit 5: Legal Processing of Projects

Unit 6: Project implementation and management

Unit 7: Legislation, quality, safety and environment

Unit 8: Human resources and intellectual property

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	A0 A02 A03 A07 A08 A09 A10 A11 A16 A18 A19 C12 CB01 CB02 CB03 CB04 CB05 CG04 CG05 CG06	1.28	32	N	-	In each session the theoretical contents of the course will be developed.
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	A0 A02 A03 A07 A08 A09 A10 A11 A16 A18 A19 C12 CB01 CB02 CB03 CB04 CB05 CG04 CG05 CG06	0.2	5	Y	Y	Different practical cases and problems related to the topics developed in the theoretical sessions will be proposed to be solved in class.
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	A0 A02 A03 A07 A08 A09 A10 A11 A16 A18 A19 C12 CB01 CB02 CB03 CB04 CB05 CG04 CG05 CG06	0.6	15	Y	N	They will be developed mainly in the computer classroom where the student will acquire the necessary knowledge of different software related to the elaboration of engineering projects.
Formative Assessment [ON-SITE]	Assessment tests	A0 A02 A03 A07 A08 A09 A10 A11 A16 A18 A19 C12 CB01 CB02 CB03 CB04 CB05 CG04 CG05 CG06	0.32	8	Y	Y	The student will take a test to evaluate all or part of the subject. These may be long development questions or multiple-choice questions, depending on the type of test defined in each case. In addition, in groups of two students must make a group presentation of a project previously chosen from an institutional repository. The defence will consist of explaining the project and its processing.
Study and Exam Preparation [OFF-SITE]	Self-study	A0 A02 A03 A07 A08 A09 A10 A11 A16 A18 A19 C12 CB01 CB02 CB03 CB04 CB05 CG04 CG05 CG06	3.6	90	N	-	The student will independently prepare the proposed assignments, study to understand the concepts developed in the practical and theoretical sessions and prepare the different evaluation tests.
Total:			6	150			
Total credits of in-class work: 2.4			Total class time hours: 60				
Total credits of out of class work: 3.6			Total hours of out of class work: 90				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System			
Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	0.00%	40.00%	Answers to theoretical questions on topics developed in class and resolution of practical exercises.
Projects	30.00%	30.00%	Group work to be presented and defended
Assessment of problem solving and/or case studies	15.00%	15.00%	Presentation for review of exercises performed in class or proposed, similar
Assessment of activities done in the computer labs	15.00%	15.00%	Resolution of cases with the use of specific software
Progress Tests	40.00%	0.00%	Voluntary tests for monitoring achievement throughout the course
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

Delivery of all activities is required.

Non-continuous evaluation:

Delivery of all activities is required.

Specifications for the resit/retake exam:

The same applies as for non-continuous evaluation.

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	32
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	5
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Formative Assessment [PRESENCIAL][Assessment tests]	8
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Global activity	
Activities	hours
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	5
Class Attendance (theory) [PRESENCIAL][Lectures]	32
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Formative Assessment [PRESENCIAL][Assessment tests]	8
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Total horas: 150	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Contreras Sanz, Javier	Proyectos : PRO-002 /	Universidad de Castilla-La Mancha, Escuela Técnica		978-84-608-0640-0	2007	
González Marcos et al	Ingeniería de Proyectos	Dextra	Madrid	9788416277018	2014	
Cos Castillo, Manuel de	Teoría general del proyecto /	Síntesis,		978-84-7738-452-6 (o	2007	
Machado Bueno, Aída.	Manual imprescindible de Presto 2016 /	Anaya Multimedia,		978-84-415-3729-3	2015	
Lewis, Cindy	Microsoft project 2019 : step by step /	Pearson Education, Inc.,		1-5093-0742-7	2019	