SUBJECT TEACHING GUIDE

G708 - Projects and the Environment

Degree in Industrial Technologies Engineering

Academic year 2025-2026

1. IDENTIFYING DATA					
Degree	Degree in Industrial Technologies Engineering			Type and Year	Compulsory. Year 4
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Projects and the Environment Module in Common with the Industrial Branch				
Course unit title and code	G708 - Projects and the Environment				
Number of ECTS credits allocated	6	Term		Semester based (1)	
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. TRANSPORTES Y TECNOLOGIA DE PROYECTOS Y PROCESOS
Name of lecturer	MARIA DEL CARMEN RUIZ PUENTE
E-mail	mdelcarmen.ruiz@unican.es
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. DESPACHO (S3041)
Other lecturers	BERNARDO ARGOS BARRIOCANAL

3.1 LEARNING OUTCOMES

- Identify the industrial project and the different disciplines involved in its realization .
  Know the different types of industrial projects and the specific methodologies for their realization .
  Identify and know the economic, environmental and safety aspects that concern industrial projects.
  Interpret and know how to proceed with the legal processing of projects.

4. OBJECTIVES

Know the life cycle of industrial projects and the involved stakeholders.
Identify the organizational structure of a company in relation to the realization of projects.
Learn and apply a methodology to elaborate an industrial project in various phases of engineering.
Know and identify the economic and environmental sustainability criteria in the design of projects.
Know and apply the techniques of economic, social and environmental assessment to the project life cycle.
Learn how to write and elaborate the basic documents of a project as well as other legally required documents.
Know the stages of legal and administrative processing of industrial projects.

6. SUBJECT PROGRAM

CONTENTS	
1	Introduction. Concept and types of industrial projects. Project life cycle and agents involved.
2	Structure and methodology of an industrial project. Stages and planning of an industrial project. General description of phases and stages of an industrial project. Types of industrial projects.
3	Legal and environmental processing. Legal processing and professional endorsement. Opening and activity licenses. Integral Environmental Autorization. Environmental Impact Assessment.
4	Environmental sustainability in the design of projects. Legal and normative framework. Environmental sustainability aspects. Sustainable design strategies. Techniques of sustainability assessment.
5	Methods and tools for life cycle analysis. Case study analysis.
6	Safety in the design of projects. Legal and normative framework. Safety aspects in the design. Design strategies for safety. Techniques of safety assessment.
7	Project writing. Norms UNE-ISO 157000. Basic documents: memory, annexes, plans, construction conditions, measurements, budget. Other legally required documents: health and safety study, environmental impact study.
8	Economic assessment of industrial projects. Economic feasibility aspects of projects. Techniques for investment estimation. Techniques for operation costs estimation. Techniques for economic profitability assessment
9	Methods and tools for the elaboration of the documents of the project. Case study analysis.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Written exam 1. Evaluation of issues 1, 2 and 3. 30%	Written exam	No	Yes	30,00
Written exam 2. Evaluation of issues 4, 6, 7 and 8. 40%	Written exam	No	Yes	40,00
Practical exercise. Evaluation of issue 5. 10%	Laboratory evaluation	No	No	10,00
Work. Evaluation of issues 7 and 9. 20%	Work	No	No	20,00
TOTAL				100,00

Observations

- To pass the subject, the addition of the weighted average score of each assessment activity must take a score equal or greater than 5 out of 10.
- If the subject is not passed on the ordinary evaluation, the qualifications of the assessment activities which score is equal or greater than 5 out to 10 will be saved for the extraordinary evaluation.

Observations for part-time students

Students enrolled part-time have the possibility of taking the full syllabus in the written exam modality in the official calls.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- De Cos, M., 1995; Teoría general del proyecto. Ingeniería de proyectos/Project engineering. Síntesis, Madrid.
- Martínez de Pisón Ascacíbar, F., 2002; La oficina técnica y los proyectos industriales. Zaragoza: Copy Center.
- Cañizal, F. y Pérez, M.A., 1993; La redacción del proyecto. Aspectos previos y metodología. Serv. Publ. Universidad de Cantabria.
- Bond, WTF., 1996; Design project planning. Prentice Hall, Hempstead.
- Hubka, V. y Eder, E., 1996; Design science. Introduction to the needs, scope and organization of engineering design Knowledge. 2Rev., Springer-Verlag, Berlín.
- Morales, S., 2018; Diseño de plantas industriales. Ed. UNED.
- Calabuig, C., Ferrer, P., Vivancos, J.L., Lozano, J.F., Viñoles, R., Gómez-Senent, E., 2015; Actividad profesional del ingeniero. Legislación y tramitación de proyectos. Ed. Universidad Politécnica de Valencia.
- Johnson, A., Gibson, A., 2014; Sustainability in engineering design: an undergraduate text. Ed. Academic Press.
- Jonker, G., Harmsen, J., 2012; Engineering for sustainability: A practical guide for sustainable design. Ed. Elsevier.
- Sebastián, M.A., Arenas, J.M., Claver, J., 2017; Oficina técnica y proyectos. Ed. UNED.
- AENOR. Norma UNE 157001:2014. Criterios generales para la elaboración formal de los documentos que constituyen un proyecto técnico.