

SUBJECT TEACHING GUIDE

1035 - Economic Assessment of Projects

Master's Degree in Industrial Engineering
Master's Degree in Industrial Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Master's Degree in Industrial Engineering Master's Degree in Industrial Engineering			Type and Year	Compulsory. Year 1 Compulsory. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Management				
Course unit title and code	1035 - Economic Assessment of Projects				
Number of ECTS credits allocated	5	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	No	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	PEDRO DIAZ SIMAL PEDRO JOSE HERRERO LOPEZ				

3.1 LEARNING OUTCOMES
- The student will make integral economic, financial and social assessment of projects. The student will evaluate different projects alternatives through multicriteria analysis techniques.
- The student will develop his/her technical activity according to a business' innovation policy adjusting to national requirements of R&D&i and using management and innovation support tools.
- The student will apply and adapt the general methodologies of economic projects assessment to specific projects of industrial infrastructures and installations.

4. OBJECTIVES

The student will know the economic and social consequences of inversion projects.
 The student will know specific assessment methods and will integrate the results in a global method of evaluation.
 The student will know the available selection criteria according to the decision context of the project.
 The student will know specific methods to estimate inversion and costs according to the different stages of project life cycle , specially about chemical, manufacture and electrical projects.
 The student will know the legal and market conditions of these inversions, and will be able to define uncertainty scenarios and their risk analysis.
 The student will learn tools and techniques to manage innovative and technological-base businesses, which allows him/her: (i) Identify and manage innovation processes; (ii) Develop and include strategies for manage technological innovation; (iii) Implement management tools for technological innovation.

6. COURSE ORGANIZATION

CONTENTS	
1	Assessment inversion projects.
2	Specific methodologies of economic assessment for projects of infrastructures and industrial installations.
3	Innovation management.
4	Risk analysis for industrial projects.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Evaluation. Parts 1 and 2.	Written exam	Yes	Yes	50,00
Evaluation. Parts 3 and 4.	Written exam	Yes	Yes	50,00
TOTAL				100,00
Observations				
<p>The exams might be divided due to teaching circumstances or students' workload . Only for duly justified causes (eg sanitary restrictions), the evaluations may be organized remotely, with prior authorization from the Center's Directorate. Remote evaluation of the same work, practical laboratory exercises and written tests are foreseen, in case a new health alert by COVID-19 makes it impossible to carry out the evaluation in person.</p> <p>ADAPTATION IN THE EVENT THAT FACE-TO-FACE ASSESSMENT IS NOT POSSIBLE</p> <p>In this case, the evaluation will maintain the same criteria and percentages described in this section. The tools of the Moodle platform will be used to carry out and deliver the evaluation activities. Where these activities are synchronous, monitoring and identity control will be carried out by video conferencing.</p>				
Observations for part-time students				
Part-time students will apply the same assessment criteria as full-time students. The temporary distribution of activities will be adapted to the particular conditions of each student when deemed necessary.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- Cost Benefit Analysis: Concepts and Practice (3rd Edition)
Anthony Boardman, David Greenberg , Aidan Vining, David Weimer.-OUP 2010
- Cost-Benefit Analysis and the Environment: Recent Developments.-
David Pearce Giles Atkinson Susana Mourato.- OCDE 2006
- ESCORSA, P. (1997) "Tecnología e innovación en la empresa. Dirección y gestión". Editorial UPC. España
- ESCORSA, P.; MASPONS, R. (2001), De la Vigilancia Tecnológica a la Inteligencia Competitiva, Prentice Hall, Madrid.
- HIDALGO, A.; LEÓN, G.; PAVÓN, J. (2002). La gestión de la innovación y la tecnología en las organizaciones, Pirámide, Madrid.
- MOLERO, J. (Coord.) (2000), Competencia Global y Cambio Tecnológico, Pirámide, Madrid.
- MOLERO, J. (2001), Innovación tecnológica y competitividad en Europa, Síntesis, Madrid.
- MORCILLO, P. (1997), Dirección estratégica de la tecnología e innovación, Civitas, Madrid.
- industriales:
- BEHRENS, W. (1994) "Manual para la preparación de estudios de viabilidad industrial ". Editorial: Viena : Organización de las Naciones Unidas para el Desarrollo Industrial.
- DEREK H. ALLEN (2009) "Economic evaluation of projects : a guide". Institution of Chemical Engineers.
- CARL D. MARTLAND (2012) "Toward More Sustainable Infrastructure: Project Evaluation for Planners and Engineers". Wiley
- FRANK KENNETH CRUNDWELL (2010) "Finance for Engineers: Evaluation and Funding of Capital Projects". Springer-Verlag New York, LLC
- HISHAM KHATIB (2003) "Economic evaluation of projects in the electricity supply industry" IEE power & energy series; 44
Published: London : Institution of Electrical Engineers.
- JERZY KICKI, EUGENIUSZ SOBZYK (2008) "Economic Evaluation And Risk Analysis Of Mineral Projects". Publisher: Taylor & Francis, Inc.