

SUBJECT TEACHING GUIDE

M2104 - Project and Construction of Infrastructures

Master's Degree in civil Engineering, Canal and Port Engineering

Academic year 2022-2023

1. IDENTIFYING DATA					
Degree	Master's Degree in civil Engineering, Canal and Port Engineering			Type and Year	Compulsory. Year 2
Faculty	School of civil Engineering				
Discipline	PROJECT AND CONSTRUCTION OF INFRASTRUCTURES				
Course unit title and code	M2104 - Project and Construction of Infrastructures				
Number of ECTS credits allocated	4,5	Term	Semester based (1)		
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	M. ANTONIA PEREZ HERNANDO				
E-mail	antonia.perez@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 0. DESPACHO (0082)				
Other lecturers	LUIS MANUEL ACEBES ESCUDERO				

3.1 LEARNING OUTCOMES

- Know the conditionings that the engineer faces when addressing the project; define and compare different alternatives to solve the problem posed; drafting the project, model of the future work; monitoring and monitoring the execution of the works. Carry out the technical-economic study and follow up on it, for the execution of different types of works.
Perform an adequate execution of different types of work, deepening the knowledge of the construction procedures commonly applied in each of them: Land movements; Extended firms; Foundations of structures; Elevations of structures; Large viaduct boards; Underground works and maritime works.

4. OBJECTIVES

The subject has as objectives, on the one hand, to train the student for the definition of infrastructures from all points of view, from its planning, analysis of alternatives, decision making and construction project, through the use of appropriate tools for this purpose.

And, on the other hand, manage its construction, choosing the appropriate construction procedures, to develop a correct planning throughout the course of the work. In addition to contemplating the analysis of these procedures from the economic, legal and administrative points of view, with the aim of optimizing the economic balance of the work.

6. COURSE ORGANIZATION

CONTENTS	
1	<p>PROJECTS: Definition of Infrastructures:</p> <ol style="list-style-type: none"> 1. The Engineering Company. 2. Project Life Cycle and Risks. 3. Evaluation and Decision Phase. 4. Definition and Construction Phase. 5. Construction Management. <p>Practical group work. Consisting of the definition of an infrastructure from its planning, to the supervision of the works.</p>
2	<p>CONSTRUCTION: Technical aspects in the construction of public works:</p> <ol style="list-style-type: none"> 1. Construction management: construction companies; technical and economic planning of the works. 2. Management of the execution of earthworks and affirmations; of foundations and elevations of structures. 3. Management of the execution of large viaducts. 4. Management of the execution of underground works and maritime works.
3	<p>CONSTRUCTION: Practical group work. Consisting of the analysis of a specific project and realization of the planning of the execution of the work. 1.- Presentation and objectives of the course practice. 2.- Practical applications and monitoring of the students' work. 3.- Evaluation of the Works.</p>

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Block 1 PROJECTS: Definition of Infrastructures Work Group	Work	No	Yes	40,00
Block 2 CONSTRUCTION: Technical aspects in the construction of public works. Written exam	Written exam	No	Yes	20,00
Block 3 CONSTRUCTION: Practical group work. Work Group	Work	No	Yes	40,00
TOTAL				100,00

Observations

CONTINUOUS EVALUATION:

- **PROJECTS:** Block 1, weight 40% (minimum qualification 4).

- **CONSTRUCTION:** Block 2, weight 20% and Block 3, weight 40% (minimum qualification 4). Ordinary, extraordinary and November **EVALUATION:** Exam, which will consist of a 1st part (50%) in relation to the theoretical aspects of the subject and a 2nd part (50%) in relation to the proposals raised in the Course Work.

The qualification of blocks 1 and 3 are retained until the extraordinary evaluation.

Observations for part-time students

The student who follows the subject part-time must present himself to the call of **ORDINARY EVALUATION**.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Apuntes de la asignatura: Aspectos previos a la redacción del proyecto. - La redacción del proyecto. - El contrato de obras.
Fernando Cañizal y M.^a Antonia Pérez.
Maquinaria y métodos modernos en construcción. -Frank Harris. Instituto Politécnico de Wolverhampton.- Gonzalo Navacerrada.