

SUBJECT TEACHING GUIDE

583 - Extension of Organization and Control of Works

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

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Master's Degree in civil Engineering, Canal and Port Engineering			Type and Year	Optional. Year 1
Faculty	School of civil Engineering				
Discipline	CROSS CURRICULAR EDUCATION				
Course unit title and code	583 - Extension of Organization and Control of Works				
Number of ECTS credits allocated	3	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
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Other lecturers	MARIO OBESO VIDAL

3.1 LEARNING OUTCOMES

- Be able to understand the Anglo-Saxon methodology of Project Management and see the differences with the project management methodology of public works in Spain.
- To be able to detect "wastes" in construction processes using the Lean Construction philosophy.
- Be able to detect risks of all kinds in the field of construction, quantify them and propose measures to reduce them using the Risk Management methodology.
- Be able to schedule a project by applying buffers to the planning based on the Critical Chain Project Management methodology.
- Be able to understand the Integrated Project Delivery methodology and see the differences with the project management methodology of public works in Spain.
- Be able to understand the Agile Management methodology and its scope of application.
- Be able to understand FIDIC-type works contracts and their scope of application.
- Be able to apply the resource leveling technique for the management of a work.
- Be able to apply the balancing line work scheduling technique in the planning of a work.
- Be able to understand the planning technique of the Last planner system and its scope of application.
- Be able to apply the Multicriteria Analysis technique for decision-making.
- Be able to carry out the planning of a work using the Primavera P6 software.

4. OBJECTIVES

- To develop students' skills and provide them with relevant knowledge related to new process management methodologies such as Project Management, Lean Construction, Risk Management, Critical Chain Project Management and Agile Methodology.
- Know and be able to apply at an intermediate level other alternatives for planning and organizing projects and works, such as Resource Leveling, Balance Line, Last Planner System and multi-criteria analysis.
- To develop in students skills so that they are able to plan a work using the Primavera P6 software.

6. SUBJECT PROGRAM

CONTENTS

1	THEMATIC BLOCK 1. METHODOLOGIES OF CONSTRUCTION MANAGEMENT: Project Management. Lean Construction. Risk management. Critical chain project management. Integrated Project Delivery. Agile Methodology. FIDIC Contracts. Optimization of methods. Diagram of simultaneous activities. Leveling of resources. Multi-criteria analysis. (Part of the content may be added or replaced by talks on similar topics by invited experts. Visits to construction sites may be added.
2	THEMATIC BLOCK 2. SPRING INTERNSHIP P6. Calendar, EPS, OBS, WBS. Definition of activities and restrictions. Definition and allocation of resources. Determination of deadlines and costs of the work. Monitoring of the work in terms of deadlines and costs. Generation of reports.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Continuous evaluation in the classroom (assistance to class is compulsory)	Work	No	No	30,00
Exam of the computer practises (Primavera P6)	Laboratory evaluation	No	Yes	40,00
Theory exam (test format)	Written exam	No	Yes	30,00
TOTAL				100,00

Observations

No approved part may be saved from one year to the next.

Observations for part-time students

Students who decide to take the subject part-time and who therefore cannot regularly attend TE/PA or PO classes, will be evaluated by a final exam which will be worth 100% of the final grade. The student will be responsible for learning on their own how to use the Primavera P6 software that is taught in the computer practices. The weight of the exam of the TE/PA part will have a weight of 60% of the subject. The weight of the PO exam with respect to the final grade of the subject will be 40%.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Apuntes de la asignatura alojados en el Aula Virtual.