

## SUBJECT TEACHING GUIDE

### 598 - Prestressed Concrete Structures and Bridges

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

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Master's Degree in civil Engineering, Canal and Port Engineering			Type and Year	Optional. Year 2
Faculty	School of civil Engineering				
Discipline	SPECIALITY IN STRUCTURES, MATERIALS AND GEOTECHNICS				
Course unit title and code	598 - Prestressed Concrete Structures and Bridges				
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. INGENIERIA ESTRUCTURAL Y MECANICA				
Name of lecturer	CARLOS ALONSO COBO				
E-mail	carlos.alonso@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 2. DESPACHO (2070)				
Other lecturers	OSCAR RAMON RAMOS GUTIERREZ ALVARO GAUTE ALONSO				

### 3.1 LEARNING OUTCOMES

- Apply the safety criteria, as well as the current regulations concerning the project and control of the pre-stressed concrete structures Identify and evaluate the actions to be

considered in the project of pre-stressed concrete structures

Analyze, check and size pre-stressed concrete structures in service and exhaustion situations

Understand the general and specific aspects of the project, execution and control of the pre-stressed concrete structures.

#### 4. OBJECTIVES

The objectives of the subject are to provide the student with basic training in relation to the sizing and calculation of pre-intensified concrete structures. The calculation in service and in break will be explained according to the theory of the boundary states. The sizing of the local efforts induced by the pre-stressing will also be explained. The knowledge acquired from the pre-tensed concrete bridge project will apply

#### 6. COURSE ORGANIZATION

CONTENTS	
1	Introduction to the Pretensed
2	Calculation in service
3	Calculation in breakage (bending); Cracking
4	Cutting and twisting
5	Reinforcement in pretensed introduction areas
6	Application to pretensed concrete bridges

#### 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Students must carry out the practical and laboratory exercises proposed in Class, all of which will be carried out during the Course. The evaluation will be continuous throughout the course. Minimum note 4 □ At the end of the course a written examination wi	Written exam	Yes	Yes	50,00
Los alumnos a tiempo parcial deberán hacer un examen escrito, se compone de dos partes: Una teórica que representa el 50% de la nota final, donde se deberá obtener una nota mínima de 4, y un ejercicio práctico que representa el otro 50%, nota mínima 4.	Work	No	Yes	50,00
<b>TOTAL</b>				<b>100,00</b>
<b>Observations</b>				
Students must carry out the practical and laboratory exercises proposed in Class, all of which will be carried out during the Course. The evaluation will be continuous throughout the course. Minimum note 4 □ At the end of the course a written examination will be done with theoretical questions, this exam represents 50% of the final grade, where they must obtain a minimum grade of 4.				
<b>Observations for part-time students</b>				
Part-time students must take a written exam, consists of two parts: a theoretical one representing 50% of the final grade, where a minimum grade of 4 should be obtained, and a practical exercise representing the other 50%, minimum grade 4.				

## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

### BASIC

Instrucción de hormigón estructural EHE-08  
Eurocodigo EC-2. Proyecto de estructuras de Hormigón  
Código Modelo 2.010