

## SUBJECT TEACHING GUIDE

### G762 - Foundations and Concrete for Machines and Structures

#### Degree in Mechanical Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Mechanical Engineering			Type and Year	Optional. Year 4
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Structures and Industrial Installations Optional Module: Mechanical Engineering				
Course unit title and code	G762 - Foundations and Concrete for Machines and Structures				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIA ESTRUCTURAL Y MECANICA				
Name of lecturer	IGNACIO LOMBILLO VOZMEDIANO				
E-mail	ignacio.lombillo@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 2. ALUMNOS DOCTORADO (2068)				
Other lecturers	YOSBEL BOFFILL ORAMA HAYDEE BLANCO WONG				

### 3.1 LEARNING OUTCOMES

-- Ability for analysis and testing of foundations and other structural elements of reinforced concrete.

### 4. OBJECTIVES

Apply the safety criteria to the foundations and reinforced concrete structures.  
Identify and assess the actions to be taken in account in the project for foundations and reinforced concrete structures.  
Design structural components of reinforced concrete in Ultimate Limit State.  
Design structural components of reinforced concrete in Serviceability Limit State.  
Learn about aspects related to the execution and control of reinforced concrete structures.

## 6. COURSE ORGANIZATION

CONTENTS	
1	Introduction to geotechnical engineering. Superficial and deep foundations. Retaining structures.
2	Bases of the project of reinforced concrete structures. Actions. Materials. Durability criteria.
3	Ultimate Limit State.
4	Serviceability Limit State.
5	Execution and control of reinforced concrete structures.
6	Technological aspects of reinforced concrete structural elements : superficial and deep foundations, retaining structures, beams, columns, floor slabs.

## 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Activities carried out in class during the course.	Others	No	No	20,00
Practices	Work	No	Yes	50,00
Written exam (theoretical - practical)	Written exam	No	Yes	30,00
<b>TOTAL</b>				<b>100,00</b>
<b>Observations</b>				
In case of COVID-19 health alert makes impossible to carry out the assessment in person, it may be carried out remotely.				
<b>Observations for part-time students</b>				
In the case of part-time course students, the evaluation consists on a written exam (theoretical - practical).				

## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
<p>Apuntes docentes de la asignatura.</p> <p>Hormigón armado. Jiménez Montoya P. et al. Editorial Gustavo Gili. ISBN:84-252-1825-X</p> <p>Cálculo de estructuras de cimentación. J. Calavera. Intemac. ISBN: 84-88764-09-X</p>