

## SUBJECT TEACHING GUIDE

### G2011 - Construction Materials

### Degree in Civil Engineering BILINGUAL UC-CU CIVIL ENGINEERING PROGRAM

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Civil Engineering BILINGUAL UC-CU CIVIL ENGINEERING PROGRAM			Type and Year	Compulsory. Year 2 Compulsory. Year 2
Faculty	School of civil Engineering				
Discipline	CONSTRUCTION MATERIALS				
Course unit title and code	G2011 - Construction Materials				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web					
Language of instruction	English	English Friendly		Mode of delivery	Face-to-face
Department	DPTO. CIENCIA E INGENIERIA DEL TERRENO Y DE LOS MATERIALES				
Name of lecturer	CARLOS THOMAS GARCIA				
E-mail	carlos.thomas@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 0. DESPACHO (0005)				
Other lecturers	DIEGO FERREÑO BLANCO SERGIO CICERO GONZALEZ				
3.1 LEARNING OUTCOMES					
-Knowledge of the experimental techniques that allow the determination of the properties of construction materials					
-Acquire the basic knowledge related to the mechanical properties necessary to follow the subjects of successive courses					
-Technical terminology associated with construction materials					
-Know the types of structural steels and the existing strategies to modify their mechanical properties					
-Know the different manufacturing and installation processes of construction materials and, in particular, the methods of design, production and placement of concrete					
4. OBJETIVES					
Learn about the relationship between the structure and behavior of materials					
Identify the main construction materials					
Define and analyze the physical-mechanical properties of construction materials					
Know and compare the properties of construction materials					

## 6. COURSE ORGANIZATION

CONTENTS (TE: THEORY; PA: EXERCISES; PLE: LAB; TU: TUTORIAL; EV: EVALUATION; TG: GROUP WORK; TA: SELF WORK)

		TE	PA	PLE	PLO	CL	TU	EV	TG	TA	TU	EV	WEEK
1	Lesson 1. Introduction: general properties of materials.	2,00	0,00	0,00	0,00	0,00	1,00	0,20	2,00	0,00	0,00	0,00	1
2	Lesson 2. Physical properties of materials	2,00	2,00	2,00	0,00	0,00	1,00	1,00	4,00	2,00	0,00	0,00	1-2
3	Lesson 3. Mechanical properties of materials	6,00	6,00	2,00	0,00	0,00	3,00	1,90	12,00	3,00	0,00	0,00	2-5
4	Lesson 4. Metallic materials	3,00	3,00	0,00	0,00	0,00	2,00	1,00	8,00	4,00	0,00	0,00	6-7
5	Lesson 5. Binders, mortars and concretes	8,00	8,00	6,00	0,00	0,00	4,00	2,00	17,50	5,00	0,00	0,00	8-12
6	Lesson 6. Polymers, ceramics and composites	3,00	3,00	0,00	0,00	0,00	2,00	1,00	6,00	0,00	0,00	0,00	12-13
7	Lesson 7. Other construction materials	2,00	0,00	0,00	0,00	0,00	1,00	0,20	2,00	0,00	0,00	0,00	14
8	Lesson 8. Selection of materials	1,00	1,00	0,00	0,00	0,00	1,00	0,20	1,00	1,00	0,00	0,00	14

## 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval	Reassessm	%
MIDTERM EXAM	Written exam	No	Yes	35,00
FINAL EXAM	Written exam	Yes	Yes	35,00
Continuous Evaluation	Others	No	No	20,00
Lab Evaluation	Test	No	No	10,00
TOTAL				100,00

Observations: Laboratory practices are mandatory to pass the subject.

Observations for part-time students

## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

Materials Science and Engineering: An Introduction, 6th Edition. William D. Callister. Publisher: John Wiley and Sons  
 Materials Selection in Mechanical Design, 2nd Edition. Michael F. Ashby. Butterworth-Heinemann  
 Fracture Mechanics: Fundamentals and Applications; T.L. Anderson (2005)  
 Spanish Structural Code  
 Civil Engineering Materials 1st Edition - September 3, 2015, Peter Claisse, eBook ISBN: 9780128027516, Paperback ISBN: 9780081002759