

SUBJECT TEACHING GUIDE

G1134 - Structures Technology

Degree in Civil Engineering

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Degree in Civil Engineering			Type and Year	Compulsory. Year 3
Faculty	School of civil Engineering				
Discipline	Subject Area: Analysis and Technology of Structures Module: Training in Applied Technology				
Course unit title and code	G1134 - Structures Technology				
Number of ECTS credits allocated	6	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	ARTURO JOSE SANTAMARIA SALLAN				
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Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 2. DESPACHO (2064)				
Other lecturers	CLAUDIO LOPEZ CASTILLO OSCAR RAMON RAMOS GUTIERREZ				

3.1 LEARNING OUTCOMES

- To apply safety criteria to steel and reinforced concrete structures .
- To identify and evaluate the actions to be considered in the project of steel and reinforced concrete structures .
- To calculate structural elements of steel and reinforced concrete at ultimate limit states .
- To calculate structural elements of steel and reinforced concrete at serviceability limit states .

4. OBJECTIVES

Students will acquire sufficient competence in the field of design and construction of steel and reinforced concrete structures.

6. COURSE ORGANIZATION	
CONTENTS	
1	Safety criteria and design basis
2	Steel structures (SS). Materials data for design.
3	(SS) Bolted connections.
4	(SS) Welded connections.
5	(SS) Resistance limit state of cross sections. Tension, compression, bending, shear, torsion.
6	(SS) Instability limit state
7	(SS) Structural elements
8	Reinforced concrete structures (RCS). Materials data for design
9	(RCS) Ultimate limit states: Equilibrium, failure under normal stresses, instability
10	(RCS) Ultimate limit states: Shear, punching shear, torsion
11	(RCS) Serviceability limit states: Cracking, deformation
12	(RCS) Strut and tie models
13	(RCS) Structural elements

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Midterm exam (Parts 1 to 7)	Written exam	No	Yes	50,00
Final exam (Parts 8 to 15)	Written exam	Yes	Yes	50,00
TOTAL				100,00
Observations				
Observations for part-time students				
The assessment will be the same as that of full-time students.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Estructuras de acero. Vol 1. Argüelles Alvarez R. et al. Bellisco Ediciones. ISBN:84-95279-97-5
Hormigón armado. Jiménez Montoya P. et al. Editorial Gustavo Gili. ISBN:84-252-1825-X
EAE. Instrucción de Acero Estructural. Ministerio de Fomento. ISBN:978-84-498-0904-0
EHE-08. Instrucción de Hormigón Estructural. Ministerio de Fomento. ISBN:978-84-498-0825-8