

Course: 2024 / 2025 - Course planning



## [MHD202] INDUSTRIAL CONSTRUCTIONS AND PLANNING **GENERAL INFORMATION** Studies UNIVERSITY MASTER IN INDUSTRIAL Subject ? ENGINEERING Semester 1 Mention / Field of Course 1 Character COMPULSORY specialisation Plan 2022 Modality Face-to-face Language CASTELLANO Credits 3 Hours/week 1.67 Total hours 30 class hours + 45 non-class hours = 75 total hours 2030 AGENDA GOALS PROFESSORS ELKORO UGARTEBURU, ANDER DOK-SUKIA MENDIZABAL, ITXARO REQUIRED PREVIOUS KNOWLEDGE Knowledge Subjects [!] Fundamentos de Teoría de Estructuras (No previous knowledge required) LEARNING RESULTS LEARNING RESULTS кс sĸ AB ECTS MHRA17 - To demonstrate capacity for the design, construction and operation of industrial plants 0.76 x MHRA18 - To demonstrate knowledge about construction, building, facilities, infrastructure and urban x 1.04 planning in the field of industrial engineering MHRA19 - Knowledge and skills for calculating and designing industrial constructions and structures. 0,08 x MHRA27 - To demonstrate the ability to integrate knowledge and face the complexity of formulating x 0.32 judgments based on information that, being incomplete or limited, includes reflections on the social, health and safety, environmental, economic and industrial implications and responsibilities MHRA28 - To communicate your conclusions and the knowledge and ultimate reasons that support them 0.24 х to specialized and non-specialized audiences in a clear and unambiguous way MHRA30 - To work with people, involving and directing them in a dynamic aimed at a common objective 0,24 that includes reflection on their ethical and social responsibility, with a global vision of the work to be carried out and the characteristics that it requires (quality, deadlines,...), assuming responsibility for the decisions made MHR126 - To apply the knowledge acquired and your problem-solving skills in new, little-known or 0,12 changing environments within broader (or multidisciplinary) contexts related to your area of study MHR129 - To possess the learning skills that allow them to continue studying in a way that will be largely 0.2 self-directed or autonomous 3 Total: KC: Knowledge or Content / SK: Skills / AB: Abilities ENAEE LEARNING RESULTS ECTS ENA124 - Knowledge and comprehension: Deep knowledge and comprehension of the engineering disciplines of their 0,5 speciality, at the level necessary to acquire the rest of the competencies of the degree. ENA129 - Analysis in engineering: Ability to identify, formulate and solve engineering problems defined incompletely, and/or 0,5 with conflicts, which accept different valid solutions and require considering knowledge beyond those of their discipline and take into account the social, health and security, environmental, economic and industrial implications; to select and apply the most appropriate methods of analysis, calculation and experimental, as well as the most innovative methods for solving problems. 0,5 ENA131 - Engineering projects: Ability to project, develop and design new complex products (parts, components, finished products, etc.), processes and systems with specifications defined incompletely and/or with conflicts, which require the integration of knowledge from different disciplines, and consider social, health and safety, environmental, economic and industrial aspects; to select and apply the appropriate methodologies or employ creativity to develop new project methodologies. 0.5 ENA133 - Research and innovation: Ability to identify, find and obtain the required data. 0.5 ENA135 - Research and innovation: Ability to consult and apply codes of good practices and security in their speciality. 0.5 ENA141 - Practical application of engineering: Ability to apply standards of engineering practice. 3 Total: SECONDARY LEARNING RESULTS

**RMH106** [!] Emplaza y define un edificio industrial y/o máquina, su cimentación y elementos de contención, teniendo en cuenta la arquitectura industrial, las características geotécnicas, la ordenación del territorio y el urbanismo industrial



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LEARNING ACTIVITIES				NCH	ТН
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning					13 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints					2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and 20 h. procedures associated with the subjects					20 h.
Carrying out exercises and solving problems individually and/or in teams			3 h.	2 h.	5 h.
Seminars, debates and/or workshops to deepen and/or share experiences. 21			2 h.		2 h.
Carrying out visits and/or learning trips to other university centres, laboratories, companies and/or thermal power plants				1 h.	1 h.
Tutoring sessions and monitoring of training activities	3			2 h.	2 h.
	W	MAKE-UP MECHANISMS			
EVALUATION SYSTEM		Individual written and/or oral tests or individual coding/programming tests			

TH - Total hours: 45 h.

RMH107 [!] Conoce las distintas etapas de un proyecto de construcción y redacta una memoria de proyecto incluyendo todos los documentos necesarios (planos, presupuesto, cálculos...) cumpliendo con la normativa vigente

LEARNING ACTIVITIES			СН	NCH	тн
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams				5 h.	5 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning				2 h.	2 h.
Carrying out/resolving projects/challenges/cases, etc. to interdisciplinary contexts, real and/or simulated, individual		12 h.	12 h.		
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects			4 h.		4 h.
Tutoring sessions and monitoring of training activities				3 h.	3 h.
Reading and personal and/or shared analysis of relevant articles, catalogues, etc.) related to the speciality	and currer	nt publications (books,	1 h.	3 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISMS			
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems			
CH - Class hours: 5 h.					

TH - Total hours: 30 h.

## CONTENTS

TOPIC 1: PROCESSING AND DOCUMENTATION OF A PROJECT. INTRODUCTION TO THE TECHNICAL BUILDING CODE.TOPIC 2: INDUSTRIAL URBAN PLANNING

TOPIC 3: INDUSTRIAL ARCHITECTURE

TOPIC 4: FOUNDATIONS





TOPIC 5: GEOTECHNICAL STUDY.

TOPIC 6: SMART CITIES/BUILDINGS

LEARNING RESOURCES AND BIBLIOGRAPHY					
Learning resources	Bibliography				
Presentations by external Lecturers Topic related web quires Moodle Platform Class presentations Specific Master Software Slides of the subject [!] https://www.codigotecnico.org/index.php/menu-seguridad-estructural .html	Steiner FR. Planning and urban design standards. John Wiley & Sons; 2006				
	Adam JA, Jüttner F, Daniels K. Industrial buildings: a design manual. Birkhauser; 2004				
	Ministerio de vivienda. Código Técnico de la Edificación. Servicio d publicaciones del Ministerio de Vivienda; 2010 Casanova M Ramon X Forcada, N Diseño de complejos industriale fundamentos Barcelona Edicions UPC 2008 R Argüelles Álvarez, F Arriaga Martitegui J M Argüelles Bustillo, J F Atienza Estructuras de acero Tomo I Cálculo, norma básica y eurocódigo 3 º edición, editorial Bellisco 2013				
					R . Argüelles Álvarez, F. Arriaga Martitegui , J.M . Argüelles bustillo, J.R . Atienza . Estructuras de acero. Tomo II: Uniones y sistemas estructurales. 2º edición, editorial Bellisco ,
					Ministerio de Transportes, Movilidad y Agenda Urbana. Código Estructural. Servicio de publicaciones del Ministerio. 2021
	Ministerio de Fomento. Instrucción de hormigón estructural (EHE-08). Servicio de publicaciones del Ministerio 2008				
	Pedro Jimenéz Montoya, Francisco Morán Cabré, Juan Carlos Arroyo Portero. Hormigón armado. Barcelona : Gustavo Gili , 2009				