

SUBJECT TEACHING GUIDE

589 - Coastal Processes

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

Academic year 2025-2026

1. IDENTIFYING DATA					
Degree	Master's Degree in civil Engineering, Canal and Port Engineering			Type and Year	Compulsory. Year 1
Faculty	School of civil Engineering				
Discipline	OCEANOGRAPHIC ENGINEERING				
Course unit title and code	589 - Coastal Processes				
Number of ECTS credits allocated	4,5	Term	Semester based (2)		
Web					
Language of instruction	English	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE				
Name of lecturer	MELISA MENENDEZ GARCIA				
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Office	Edificio IH Cantabria. Planta: + 2. DESPACHO (226)				
Other lecturers	FERNANDO JAVIER MENDEZ INCERA				

3.1 LEARNING OUTCOMES
<ul style="list-style-type: none"> -- Identify and characterize the most relevant drivers in the generation of coastal dynamics - Define and evaluate the most relevant characteristics of the marine climate required for engineering applications - Identify and model wave transformation processes - Assess and model sea level components - Understand and model the most relevant processes in the surf zone

4. OBJECTIVES
To provide a solid foundation in the understanding and modeling of the relevant coastal processes as a first step towards engineering applications

6. SUBJECT PROGRAM	
CONTENTS	
1	Introduction
2	Wave mechanics
3	Wave propagation
4	Observations
5	Short-term wave analysis
6	Long-term wave analysis. Wave climate
7	Sea level
8	Surf zone hydrodynamics

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Mid-term exam1	Written exam	No	Yes	33,33
Mid-term exam2	Written exam	No	Yes	33,33
Mid-term exam3	Written exam	No	Yes	33,34
TOTAL				100,00
Observations				
'Only for duly justified reasons (e.g. health restrictions) the evaluation tests may be organized remotely, with the prior authorization of the School Director'.				
Observations for part-time students				
Part-time students will be offered two options: Option 1. Following the standard evaluation process with parcial evaluation exams Option 2. Take a single exam with all the contents, on the official dates of the ordinary and extra-ordinary exams.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Powerpoint presentations and/or class notes will be provided for every section. The following additional bibliography (not required) is recommended: - Bosboom, J. and Stive, M.J.F. (2021) Coastal Dynamics. TU Delft Open. ISBN 978-94-6366-370-0. - Kamphuis, W. (2010). Introduction to Coastal Engineering and management. World Scientific - Dean, R. and Dalrymple, R.A. (1991). Water Wave Mechanics for Engineers and Scientists. World Scientific. - Leo H. Holthuijsen (2010). Waves in Oceanic and Coastal Waters. Cambridge University Press.