

## SUBJECT TEACHING GUIDE

### 589 - Coastal Processes

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

Academic year 2023-2024

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	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE		
Name of lecturer	IÑIGO LOSADA RODRIGUEZ		
E-mail	inigo.losada@unican.es		
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 0. DESPACHO (0049)		
Other lecturers	MELISA MENENDEZ GARCIA ALEXANDRA TOIMIL SILVA		

### 3.1 LEARNING OUTCOMES

- 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. COURSE ORGANIZATION

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	%
Wave mechanics and wave propagation	Written exam	No	Yes	15,00
Observations, short- and long-term wave analysis	Written exam	No	Yes	15,00
Final Exam-Part 2	Written exam	Yes	Yes	15,00
Report on selected topics	Work	No	No	10,00
Wave mechanics and wave propagation	Others	No	Yes	15,00
Observations, short- and long-term wave analysis	Others	No	Yes	15,00
Final Exam-Part 1	Written exam	Yes	Yes	15,00
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 Option 2. The three following conditions need to be met: a. Take the 3 theoretical exams for a 45% of the evaluation at scheduled times along the course, b. Take a final exam with practical contents once the classes have been finished for a 45% of the final grade c. Deliver the report on a selected topic to be chosen from a list of topics provided by the instructor				

## 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.