

SUBJECT TEACHING GUIDE

548 - Waves, swells and sea level

Master's Degree in Coasts and Ports

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Master's Degree in Coasts and Ports			Type and Year	Compulsory. Year 1
Faculty	School of civil Engineering				
Discipline					
Course unit title and code	548 - Waves, swells and sea level				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE				
Name of lecturer	FERNANDO JAVIER MENDEZ INCERA				
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Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 0. DESPACHO FERNANDO JAVIER MENDEZ INCERA (0054)				
Other lecturers	MARIA SONIA CASTANEDO BARCENA LAURA CAGIGAL GIL				

3.1 LEARNING OUTCOMES

- The student will be able of writing a report about wave climate in any coastal location.
 - The student will understand the different spatial and temporal scales of met ocean variables in a deterministic and probabilistic way.
 - The student will know the different met ocean (wind, waves, sea level) data bases. He/she will be able of applying these data bases to coastal engineering projects.
 - The student will understand the random nature of waves and will be able of modelling the generation and transformation of wind waves.
- The student will know the basic concepts of water wave mechanics, kinematic and dynamic properties of wave propagation and its interaction with the shelf, the beaches and the ports.

4. OBJECTIVES

- To understand and to model the wave-induced coastal physical processes
- To understand water wave mechanics
- To know and to model the wave transformation processes
- To know and to use wave and sea level data bases
- To know the different methodologies to study short-term wave analysis and long-term wave analysis
- To know and to model the processes associated to long waves and to mean sea level
- To know and to model the main processes in the surf zone

6. SUBJECT PROGRAM

CONTENTS

1	Introduction and Wave Analysis
2	Wave Analysis
3	Water wave mechanics and wave propagation
4	Long waves
5	Wave Climate
6	Surf Zone Hydrodynamics

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Final Exam (50%)	Written exam	Yes	Yes	50,00
Throughout the course (10%)	Others	No	No	10,00
Homework (40%)	Work	No	Yes	40,00
TOTAL				100,00
Observations				
Only for duly justified causes (eg sanitary restrictions), the evaluations may be organized remotely, with prior authorization from the Center's Directorate.				
Observations for part-time students				
Part-time students will apply the same assessment criteria as full-time students. The temporary distribution of activities will be adapted to the particular conditions of each student when deemed necessary.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Apuntes distribuidos por el profesorado