

SUBJECT TEACHING GUIDE

G1466 - Coastal Engineering

BILINGUAL UC-CU CIVIL ENGINEERING PROGRAM

Academic year 2025-2026

1. IDENTIFYING DATA					
Degree	BILINGUAL UC-CU CIVIL ENGINEERING PROGRAM			Type and Year	Optional. Year 1
Faculty	School of civil Engineering				
Discipline	Optional Subjects				
Course unit title and code	G1466 - Coastal Engineering				
Number of ECTS credits allocated	6	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	FERNANDO JAVIER MENDEZ INCERA				
E-mail	fernando.mendez@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 0. DESPACHO (0054)				
Other lecturers	MARIA SONIA CASTANEDO BARCENA MELISA MENENDEZ GARCIA				

3.1 LEARNING OUTCOMES

- To understand that the coastal area is one of the environments for civil engineering projects .
- To understand the most relevant dynamics and physical processes that affect the design , project, construction and exploitation of coastal structures, as well as the affection to coastal morphodynamics and coastal risks
- To know the stressors that affect the coastal area and to introduce concepts of integrated coastal zone management .
- To know and to classify different typologies of coastal structures, according to criteria of functionality and stability.
- To evaluate the impact of different coastal engineering activities and to understand the coastal risks and the methodologies for coastal risk assessment.

4. OBJECTIVES

Gaining knowledge on the importance of coastal areas in civil engineering.
 Understanding and modeling of the most relevant coastal dynamics and processes and their relation with: 1) the design, project, construction and operation of coastal infrastructures: 2) coastal Morphodynamics and 3) coastal impacts and risks.
 To become familiar with coastal management and coastal solutions to address human and natural pressures .
 To learn about the types of coastal structures , their functionality and stability.
 To learn about and how to assess impacts of coastal engineering projects on the coast
 To learn and characterize coastal risks and the existing methods for their assessment

6. SUBJECT PROGRAM

CONTENTS

1	Introduction. Course Overview. Water waves
2	Short-term wave analysis
3	Long-term wave analysis
4	Tides and water levels
5	Wave transformation and breaking
6	Design of coastal structures
7	Breakwaters and jetties
8	Basic shore processes
9	Beach engineering
10	Estuarine processes
11	Exams

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Exam with theoretical and practical questions	Written exam	No	Yes	35,00
Homework, based on practical exercises based on concepts explained in the lecturers Laboratory Homework, based on lab experiments carried out in a wave flume	Work	No	No	30,00
Exam with theoretical and practical questions	Written exam	No	Yes	35,00
TOTAL				100,00
Observations				
0,0-4,9: Suspenso (SS). 5,0-6,9: Aprobado (AP). 7,0-8,9: Notable (NT). 9,0-10: Sobresaliente (SB).				
Observations for part-time students				
0,0-4,9: Suspenso (SS). 5,0-6,9: Aprobado (AP). 7,0-8,9: Notable (NT). 9,0-10: Sobresaliente (SB).				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
 Presentaciones en power point de la asignatura
 Kamphuis, J.P. (2000). Introduction to Coastal Engineering and Management. Advances Series on Ocean Engineering, Vol. 16. World Scientific.

