SUBJECT TEACHING GUIDE

M1895 - Dynamics and Transport in Transitional and Coastal Waters

Master's degree in integrated management of water systems

Academic year 2018-2019

1. IDENTIFYING DATA					
Degree	Master's degree in integrated management of water systems			Type and Year	Compulsory. Year 1
Faculty	School of civil Engineering				
Discipline					
Course unit title and code	M1895 - Dynamics and Transport in Transitional and Coastal Waters				
Number of ECTS credits allocated	2	Term		Semester based (2)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE
Name of lecturer	MARIA SONIA CASTANEDO BARCENA
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Other lecturers	

3.1 LEARNING OUTCOMES
- The student will know the fundamentals of integrated water resources management and the key elements that must be taken into account in hydrological planning and land management.
- The student will be able to understand, solve and apply the general equations of long waves, jet dynamics and wave-current interaction, as well as the expressions of equilibrium analysis.
- The student will know the fundamental principles of the scientific method.

4. OBJECTIVES

The general objective is that the student acquires a wide understanding of coastal system dynamics
To be able to understand the physical mechanisms that govern the different marine dynamics (waves, currents, tides, wind).
To be able to identify the domains where the different marine dynamics govern and to know the theoretical -practical approach for their characterization.
To provide knowledge to understand the interaction between marine dynamics and coastal dynamics.
To understand the importance of quantifying the marine dynamics as an essential part of the study and design of actions on the coast.
To be able to apply the acquired knowledge to understand the processes that occur in beaches, ports and estuaries.

6. COURSE ORGANIZATION

	CONTENTS
1	Introduction to the dynamics and transport processes in coastal waters
2	Wind waves. Generation and propagation
3	Wind waves effects on the coast: currents and sea level
4	Coast morphodynamics
5	Long waves. Generation and propagation.
6	Currents and sea level in estuaries.
7	Estuarine mosphodynamic
8	Final test

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Case study #1	Work	No	No	20,00
Case study #2	Work	No	No	20,00
Final test	Written exam	No	Yes	60,00
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

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Apuntes "Volumen I. Dinámicas" Documento de referencia SMC. Grupo de Ingeniería Oceanográfica y de Costas, GIOC (Universidad de Cantabria).

Presentaciones en Powerpoint de la asignatura

Dean, R. G., Dalrymple, A. (1993). Water wave mechanics for engineers and scientists. Ed. World Scientific. Advanced series on Ocean Engineering. Vol. 2.