SUBJECT TEACHING GUIDE

M1862 - Port Agitation

Master's degree in coast and port engineering

Academic year 2016-2017

1. IDENTIFYING DATA					
Degree	Master's degree in coast and port engineering			Type and Year	Optional. Year 1
Faculty	School of civil Engineering				
Discipline					
Course unit title and code	M1862 - Port Agitation				
Number of ECTS credits allocated	5	Term	Term based (3)		
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	GABRIEL DIAZ HERNANDEZ
E-mail	gabriel.diaz@unican.es
Office	E.T.S. Ingenieros de Caminos, C.P.. Planta: + 3. LOCAL 11 - Hidráulica (3009)
Other lecturers	JAVIER LOPEZ LARA

3.1 LEARNING OUTCOMES
- The student will know each of the families of existing tools in the state of the art for analysis of processes related to port engineering, focused on studies of agitation and resonance
- The student identifies and properly applied each of the tools according to the needs, objectives, assumptions and limitations of each study.
- The student will be able to apply their knowledge to solve problems, situations and real harbor and coastal engineering projects

4. OBJECTIVES

The main objective of the course is to give students the basic tools to conduct a study of harbour agitation and assess and adapt the required corrective measures.

6. COURSE ORGANIZATION

	CONTENTS
1	Physical processes involved in the port agitation
2	Operational and legal limits in commercial marinas
3	Advanced waave-sructure interaction modelling and analysis
4	Project 1 - operationan system for harbour agitation in Langosteira Harbour
5	Project 2 - Design and improvement of a marina basin based on geomerical design, harbour agitation and resonance. Castro Urdiales Harbour case.
6	Project 3 - Approach and solution of practical case studies, diagnosis and correction of agitation in different types of port, basins and docks.Lastres harbour case.
7	Evaluation

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Project 1 - Operational system for harbour agitation and resonance	Work	No	Yes	30,00
Project 2 - Numerical modelation using CFD models	Work	No	Yes	30,00
Project 3 - Design of a Marina Basin under agitation and resonance	Work	No	Yes	30,00
Project 4 - Long wave agitation assesment	Work	No	Yes	10,00
TOTAL				100,00

Observations

A total of 4 projects will be developed during the course, using all the theoretical, practical, empirical and experimental information given dring the course.

Observations for part-time students

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Michael B Abbott,W. Alan Price. Coastal, Estuarial and Harbour Engineer's Reference Book

Fournier, C., Mulcahy, M., Chow, K., and Sayao, O. (1993) Wave Agitation Criteria for Fishing Harbours in Atlantic Canada. Coastal Engineering 1992: pp. 3230-3243.

Programa ROM - Recomendaciones de Obras Marítimas

Thomas Stevenson. The Design and Construction of Harbours. A Treatise on Maritime Engineering. Cambridge Library Collection - Technology