

## SUBJECT TEACHING GUIDE

### 520 - Port Agitation

### Master's Degree in Coasts and Ports

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Master's Degree in Coasts and Ports			Type and Year	Optional. Year 1
Faculty	School of civil Engineering				
Discipline					
Course unit title and code	520 - Port Agitation				
Number of ECTS credits allocated	5	Term	Semester based (2)		
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	GABRIEL DIAZ HERNANDEZ				
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Office	Edificio IH Cantabria. Planta: + 2. DESPACHO (225)				
Other lecturers	MARIA EMILIA MAZA FERNANDEZ				

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 environment, 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				
<p>Continuous evaluation will be carried out throughout the course. The assessment criteria for evaluation will take this into account:</p> <ul style="list-style-type: none"> <li>- Participation in class and interest shown.</li> <li>- Mastering the basic concepts set out in the subject.</li> <li>- Be able to apply the knowledge acquired, solving practical problems.</li> <li>- Present the proposed work in a correct manner.</li> </ul> <p>The instruments used to carry out the evaluation will be: Practical activities and partial tests carried out will have the same weight on the final grade. The minimum grade to pass the course must be a 4.0 in total. Repeated unjustified lack of attendance and punctuality in the course classes may result in the loss of continuous assessment.</p> <p>Only for duly justified causes (eg sanitary restrictions), the evaluations may be organized remotely, with prior authorization from the Center's Directorate.</p>				
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
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