



Teaching Guide				
Identifying Data				2015/16
Subject (*)	Oceanografía	Code	730496008	
Study programme	Mestrado Universitario en Enxeñaría Naval e Oceánica (plan 2012)			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Obligatoria	4.5
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Naval e Oceánica			
Coordinador	Díaz Casás, Vicente	E-mail	vicente.diaz.casas@udc.es	
Lecturers	Castro Santos, Laura Díaz Casás, Vicente	E-mail	laura.castro.santos@udc.es vicente.diaz.casas@udc.es	
Web				
General description	Coñecemento dos elementos de oceanografía física (ondas, correntes, mareas, etc.) así como das cargas que xeneran e o seu efecto sobre o comportamento das estruturas oceánicas.			

Study programme competences / results	
Code	Study programme competences / results
A8	Coñecemento dos elementos de oceanografía física (ondas, correntes, mareas, etc.) necesarios para a análise do comportamento das estruturas oceánicas, e dos elementos das oceanografías química e biolóxica que deben ser tidos en conta para a seguridade marítima e para o tratamento da contaminación, e do impacto ambiental producido polos buques e artefactos mariños.
B2	Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en ámbitos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo
B3	Que os estudantes sexan capaces de integrar coñecementos e enfrontarse á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos
B4	Que os estudantes saiban comunicar as súas conclusións e os coñecementos e razóns últimas que as sustentan a públicos especializados e non especializados dun modo claro e sen ambigüidades.
B5	Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun modo que haberá de ser en boa medida autodirixido ou autónomo.
B6	Ser capaz de realizar unha análise crítica, avaliación e síntese de ideas novas e complexas.
B7	Falar ben en público
C1	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.

Learning outcomes			
Learning outcomes	Study programme competences / results		
Knowledge of the main elements of physical oceanography (waves, currents, tides, among others), which will be useful for analyzing the behaviour of ocean structures and their components.	AC8	BC2 BC3 BC4 BC5 BC6 BC7	CC1

Contents
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Topic	Sub-topic
Unit 1: Physical oceanography	Environmental factors in the conception and design of ocean installations.
Unit 2: Waves theory	Mathematical equations of waves parameters
Unit 3: Modelling sea state	Mathematical and statistical spectra Modelling of wind and currents
Unit 4: Environmental loads	Loads produced by waves. Loads produced by wind. Loads produced by currents.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student's personal work hours	Total hours
Objective test	A8 B2 B3 B4 B5	2	0	2
Problem solving	A8 B2 B3 B4 B5 C1	10	30	40
Supervised projects	A8 B2 B3 B4 B5 B6 B7 C1	0.5	20	20.5
Guest lecture / keynote speech	A8 B2 B5 B6	30	15	45
Personalized attention		5	0	5

(\*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies	
Methodologies	Description
Objective test	Written test to evaluate the theoretical knowledge of the subject
Problem solving	Practical application of the contents of the subject
Supervised projects	Project of the contents of the subject
Guest lecture / keynote speech	Oral teaching about the content of the subject

Personalized attention	
Methodologies	Description
Supervised projects	Continuous monitoring of the progress of the project. Individualized or discounted tutoring to resolve incidents or difficulties encountered in the preparation of the projects.

Assessment			
Methodologies	Competencies / Results	Description	Qualification
Objective test	A8 B2 B3 B4 B5	Written test for the practical assessment of theoretical knowledge of the contents	50
Problem solving	A8 B2 B3 B4 B5 C1	Resolution of several questions raised during the course	30
Supervised projects	A8 B2 B3 B4 B5 B6 B7 C1	Practical application of the contents in a project	20

Assessment comments
40%, at least, should be obtained of each Unit to pass this subject. All the students should deliver all the issues considering the deadline, neither problems and project will be evaluated after the date specified.

Sources of information



<b>Basic</b>	<ul style="list-style-type: none"><li>- Chakrabarti, S. (2005). Handbook of offshore engineering. Amsterdam : Elsevier</li><li>- Tucker, M.J. (2001). Waves in ocean engineering. Amsterdam : Elsevier</li><li>- El-Hawary, F. (2001). The ocean engineering handbook. Boca Raton : CRC Press</li><li>- Open University Oceanography (1991). Case Studies in Oceanography and Marine Affairs. Open University Oceanography</li><li>- Apel, J. R. (1987). Principles of Ocean Physics. Academic Press</li><li>- Pinto Peixoto, J.; Oort, A. H. (1992). Physics of Climate. American Institute of Physics</li></ul>
<b>Complementary</b>	

## Recommendations

Subjects that it is recommended to have taken before

Subjects that are recommended to be taken simultaneously

Subjects that continue the syllabus

Other comments

(\*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.