



Guía Docente				
Datos Identificativos				2021/22
Asignatura (*)	Manobrabilidade e Hidrodinámica en Augas Someras	Código	730542012	
Titulación				
Descritores				
Ciclo	Período	Curso	Tipo	Créditos
Mestrado Oficial	2º cuatrimestre	Primeiro	Obrigatoria	3
Idioma	Inglés			
Modalidade docente	Presencial			
Prerrequisitos				
Departamento	Enxeñaría Naval e Industrial			
Coordinación	Díaz Casás, Vicente	Correo electrónico	vicente.diaz.casas@udc.es	
Profesorado	Díaz Casás, Vicente Santiago Caamaño, Lucía	Correo electrónico	vicente.diaz.casas@udc.es lucia.santiago.caamano@udc.es	
Web	http://www.master-seas40.unina.it			
Descrición xeral	The main objective of this course is to introduce the students to the basic concepts for the assessment and prognosis of ship maneuverability and to the development of methods for the analysis of maneuvering behavior of ships, including also the basics of characteristics of flows around ships regarding ship propulsion and manoeuvrability.			
Plan de continxencia	1. Modifications to the content: - No changes will be made 2. Methodologies: Teaching methodologies that are maintained: - Supervised work. Teaching methodologies that are modified: - Mixed objective/subjective test: will be done using Moodle or equivalent institutional application. 3. Mechanisms for personalized attention to students: - Email/MS Teams: Daily, following the student's request.. 4. Modifications in the evaluation: - No changes will be made 5. Modifications of the bibliography or webgraphy: - No changes will be made			

Competencias / Resultados do título

Código	Competencias / Resultados do título
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Resultados da aprendizaxe



Resultados de aprendizaxe	Competencias / Resultados do título		
Students will acquire knowledge about the basic motion equations of the ship, and the hydrodynamic forces which influence its manoevrability characteristics.	AM2	BM1	CM2
Students will acquire the ability to develop methods for analysis of manoevring behaviour of ships, including the evaluation of rudder design and to design a rudder by themselves.		BM2	CM4
Students will acquire the capabilities to assess the manoevrability capabilities of a ship, including also the basic principles and the influence of flows around ships regarding ship propulsion and manoevrability.		BM3	CM6
		BM4	CM7
		BM5	
		BM6	
		BM7	
		BM10	
		BM12	

Contidos	
Temas	Subtemas
Coordinates & degrees of freedom	
Nonlinear governing equations of motion hydrodynamic forces & moments	
Rudder forces and rudder design	
Yaw stability	
Manoevring tests (constraint & unconstraint model tests)	
Slender body approximation	
Application of CFD simulations	
Influence of shallow water, waves and wind.	

Planificación				
Metodoloxías / probas	Competencias / Resultados	Horas lectivas (presenciais e virtuais)	Horas traballo autónomo	Horas totais
Traballos tutelados	A2 B2 B3 B5 B11 B13 C7 C2	5	34	39
Proba mixta	A2 B2 B3 B4 B5 B6 B8 B11 B13 C4 C2	2	0	2
Sesión maxistral	A2 B2 B4 B6 B7 B8 C6 C4	16	16	32
Atención personalizada		2	0	2

*Os datos que aparecen na táboa de planificación son de carácter orientativo, considerando a heteroxeneidade do alumnado

Metodoloxías	
Metodoloxías	Descrición
Traballos tutelados	Supervised learning process aimed at helping students to work independently in a range of contexts (academic and professional). Focused primarily on learning ?how to do things? and on encouraging students to become responsible for their own learning.
Proba mixta	Oral Test covering the contents of the subject.
Sesión maxistral	Oral presentation (using audiovisual material and student interaction) designed to transmit knowledge and encourage learning. Presentations of this type are variously referred to as ?expository method?, ?guest lectures? or ?keynote speeches?. (The term ?keynote? refers only to a type of speech delivered on special occasions, for which the lecture sets the tone or establishes the underlying theme; it is characterised by its distinctive content, structure and purpose, and relies almost exclusively on the spoken word to communicate its ideas.)



Atención personalizada

Metodoloxías	Descrición
Sesión maxistral Traballos tutelados	The personalized attention to students, understood as a support in the teaching-learning process, will take place in the hours of tutoring of the professor.

Avaliación

Metodoloxías	Competencias / Resultados	Descrición	Cualificación
Proba mixta	A2 B2 B3 B4 B5 B6 B8 B11 B13 C4 C2	Oral examination of the concepts covered in the course.	60
Traballos tutelados	A2 B2 B3 B5 B11 B13 C7 C2	Preparation of a simulation project with the scope described in the virtual campus. - Explanatory memorandum of the project : 20% - Oral defense: 20%	40

Observacións avaliación

In the second opportunity and in the advanced one the students will have to make the delivery of the totality of the tutored works and the oral presentation of the same. The delivery of the documentary works that are carried out in this matter: It will be requested in virtual format and / or computer support. It will be done through Moodle, in digital format without the need to print them. General EMJMD Sustainable Ship and Shipping SEAS 4.0 evaluation rules: - Students will have only two opportunities to pass a course. If failing to do so, they may be forced to leave the degree. - No part time or lecture attendance exemption are allowed in this degree.

Fontes de información

Bibliografía básica	- Lewandowski, Edward M. (2004). The dynamics of marine craft : maneuvering and seakeeping . New Jersey - Fossen, Thor I. (2011). Handbook of marine craft hydrodynamics and motion control vademecum de navium motu contra aquas et de motu gubernando . Wiley
Bibliografía complementaria	

Recomendacións

Materias que se recomenda ter cursado previamente
Comportamento do Buque na Mar/730542008
Materias que se recomenda cursar simultaneamente
Sistemas Intelixentes de Soporte ás Decisións/730542013
Materias que continúan o temario
Observacións
To help in achieving a sustainable environment and to get the objective of number 5 action of the "Ferrol Green Campus Action Plan" (Healthy and environmentally and socially sustainable research and teaching): The assignments to be done in this course:- Will be required in digital format.- Will be delivered using Moodle, with no need to print them. In case it is necessary to print them:- Plastics won't be used.- Two side printing will be used.- Recycled paper will be used.- Printing drafts will be avoided. A sustainable use of the resources should be done, together with the prevention of negative impacts on the environment.

(*)A Guía docente é o documento onde se visualiza a proposta académica da UDC. Este documento é público e non se pode modificar, salvo casos excepcionais baixo a revisión do órgano competente dacordo coa normativa vixente que establece o proceso de elaboración de guías