UNIVERSIDADE DA CORUÑA

Guía Docente				
Datos Identificativos				2022/23
Asignatura (*)	Estabilidade tras Avarías		Código	730542023
Titulación	Master Universitario Erasmus Mundus en Sostibilidade e Industria 4.0 aplicada ao Sector Marítimo			
Descriptores				
Ciclo	Período	Curso	Tipo	Créditos
Mestrado Oficial	1º cuadrimestre	Segundo	Optativa	6
Idioma	Inglés			
Modalidade docente	Presencial			
Prerrequisitos				
Departamento	Enxeñaría Naval e IndustrialEnxeñaría Naval e Oceánica			
Coordinación	Miguez Gonzalez, Marcos	Correo electrónico	marcos.miguez@udc.es	
Profesorado	Miguez Gonzalez, Marcos Santiago Caamaño, Lucía	Correo electrónico	marcos.miguez@udc.es lucia.santiago.caamano@udc.es	
Web				
Descrición xeral	The objective of this course is that the students acquire the capabilities needed for understanding the process of damage of a ship or floating structure, including the theoretical basis, the capability of solving practical cases and the knowledge and application basis of contemporary damage stability requirements.			

Competencias / Resultados do título	
Código	Competencias / Resultados do título
B7	CG1 ? To display the adequate intercultural competence to successfully navigating within multicultural learning environments and to implement basic management principles suitable for a multicultural working environment.
B8	CG2 ? To express an attitude of intellectual inquisitiveness and open-mindedness.
B11	CG5 ? To have the capability to identify, formulate and solve engineering problems within realistic constraints.
C2	CT2 - Mastering oral and written expression in a foreign language.
C4	CT4 - Acting as a respectful citizen according to democratic cultures and human rights and with a gender perspective.
C6	CT6 - Acquiring skills for healthy lifestyles, and healthy habits and routines.
C7	CT7 -Developing the ability to work in interdisciplinary or transdisciplinary teams in order to offer proposals that can contribute to a sustainable environmental, economic, political and social development.

Resultados da aprendizaxe			
Resultados de aprendizaxe	Competencias / Resultados do título		
Knowledge of the basic theoretical concepts in which the analysis of the process of damage of a ship or floating structure is based, including the capability to solve practical cases, together with the knowledge and application basis of contemporary damage stability requirements.		BM6 BM7 BM10	CM2 CM4 CM6 CM7

Contidos	
Temas	Subtemas
Introduction.	Introduction to ship damage stability.
Ship equilibrium after damage.	Lost buoyancy method. Added weight method. Ship longitudinal and transverse equilibrium after damage.
Deterministic damage stability regulations.	Introduction to damage stability regulations. Floodable lengths concept. Damage stability deterministic regulations and criteria.
Probabilistic damage stability regulations. Probability.	Basic concepts of probability.
Probabilistic damage stability regulations. Criteria.	Introduction to probabilistic damage stability regulations. IMO SOLAS. Theoretical concepts.

Probabilistic damage stability regulations. Practical implementation.	Practical implementation and analysis of results of IMO SOLAS damage stability requirements.

Planificación				
Metodoloxías / probas	Competencias / Resultados	Horas lectivas (presenciais e virtuais)	Horas traballo autónomo	Horas totais
Sesión maxistral	B7 C2 C4 C6 C7	28	42	70
Proba mixta	B8 B11 C2	2	0	2
Presentación oral	B7 B8 B11 C2 C7	1	4	5
Prácticas a través de TIC	B11	9	13.5	22.5
Traballos tutelados	B7 B8 B11 C2 C4 C6 C7	5	42.5	47.5
Atención personalizada		3	0	3
*Os datos que aparecen na táboa de planificación son de carácter orientativo, considerando a heteroxeneidade do alumnado				

Metodoloxías	
Metodoloxías	Descrición
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?.
Proba mixta	Mixed test consisting of essay-type and objective test questions. Essay section consists of open (extended answer) questions; objective test may contain multiple-choice, ordering and sequencing, short answer, binary, completion and/or multiple-matching questions.
Presentación oral	Core component of teaching-learning process involving coordinated oral interaction between student and teacher, including proposition, explanation and dynamic exposition of facts, topics, tasks, ideas and principles. In this course, the oral presentation will consist on the presentation of the technical report in front of the rest of students and the proffessors.
Prácticas a través de TIC	Practice-based learning method for theoretical subject content using ICT resources (demonstrations, simulations, etc.) ICT is an excellent medium for practical knowledge applications and information processing, and a key aid to student learning and skills development. In this course, MAXSURF and others will be used to practicaly evaluate some of the contents described during the theoretical lectures.
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. In this course, the supervised project will consist on a group based technical report based on an assignment done by the proffessors, and dealing about some of the topics of the course. This report may be presented in front of the rest of students. This fact will be announced in Moodle/Teams at the beggining of the course.

Atención personalizada	
Metodoloxías	Descrición

Traballos tutelados Presentación oral Sesión maxistral	The professors will provide personalized attention to the students both personally and remotely using MS Teams or email. In this course, this personalized attention will consist on support while developing the supervised projects, the ICT practicals and doubts and questions related to the contents ellaborated during the lectures.

Avaliación			
Metodoloxías	Competencias / Resultados	Descrición	**Cualificación**
Traballos tutelados	B7 B8 B11 C2 C4 C6 C7	The qualification of the group based technical report will represent a 60 % of the student´s final qualification.	60
Presentación oral	B7 B8 B11 C2 C7	In case the oral presentation is finally programmed, the percentage of its qualification will be a 10 %, including the presentation and the answers to the questions formulated by the proffessors and other students. In case the oral presentation is not scheduled, its contribution will be transfered to the other methodologies (35 % Theoretical exam - 65 % Group Based Technical report)	10
Proba mixta	B8 B11 C2	The qualification of the theoretical exam of this course will represent a 30 % of the student´s final qualification. It will be neccesary to have a grade higher than 4 to pass the course.	30
Outros			

Observacións avaliación
According to the degree regulations, the students will have the oportunity to pass this course in two oportunities (first and second oportunity). In order to pass the course, an overall mark of 5 out of 10 should be obtained by applying the percentages above to each of the methodologies, considering each of them evaluated in a scale from 0 to 10. At the beggining of the course, dates for presenting the technical reports and doing the oral presentation will be published in Moodle/ MS Teams. In the second oportunity, students will be able to repeat the exam and correct/modify the technical reports; however, in order to pass the course, both the technical report and the oral presentation should have been done in any case fullfilling the prescribed deadlines set during the course. General EMJMD Sustainable Ship and Shipping SEAS 4.0 evaluation rules: - Students will have only two oportunities to pass a course. If failing to do so, they may be forced to leave the degree. - No part time or lecture attendance exemptions are allowed in this degree.

Fontes de información

Bibliografía básica	- Tupper, E. C., Rawson, K. J. Basic ship theory, combined volume. Butterworth-Heinemann. 2001.- Lewis, E. V. Principles of naval architecture second revision: stability and strength. SNAME. Jersey.1988.- Biran, A., Lopez Pulido, R. Ship hydrostatics and stability. Butterworth-Heinemann. 2013.- Garcia Lena, J.L., de Juana Gamo, J. El nuevo marco legislativo internacional de estabilidad en averías. SOLAS 2009. Ministerio de Fomento. 2009.- Belenky, Sevastianov. Stability and Safety of Ships. Society of Naval Architects and Marine Engineers (SNAME). 2007. - IMO. MSC.1/Circ.1226. International Maritime Organization. 2007. - IMO. RESOLUTION MSC.216(82). International Maritime Organization. 2006.
Bibliografía complementaria	

Recomendacións
Materias que se recomenda ter cursado previamente
Materias que se recomenda cursar simultaneamente
Materias que continúan o temario
Traballo Fin de Máster/730542032
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 environmentaly 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.