UNIVERSIDADE DA CORUÑA

Teaching Guide			
Identifying Data			**2022/23**
Subject (*)	Ship Damage Stability	**Code**	730542023
Study programme	Master Universitario Erasmus Mundus en Sostibilidade e Industria 4.0 aplicada ao Sector Marítimo		

Descriptors				
Cycle	**Period**	**Year**	**Type**	**Credits**
Official Master's Degree	1st four-month period	Second	Optional	6

Language	English			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Naval e IndustrialEnxeñaría Naval e Oceánica			
Coordinador	Miguez Gonzalez, Marcos	**E-mail**	marcos.miguez@udc.es	
Lecturers	Miguez Gonzalez, Marcos	**E-mail**	marcos.miguez@udc.es	
	Santiago Caamaño, Lucía		lucia.santiago.caamano@udc.es	
Web				
General description	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.			

Study programme competences / results	
Code	**Study programme competences / results**
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.

Learning outcomes		
Learning outcomes	**Study programme competences / results**	
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.	BC6 BC7 BC10	CC2 CC4 CC6 CC7

Contents	
Topic	**Sub-topic**
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.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	B7 C2 C4 C6 C7	28	42	70
Mixed objective/subjective test	B8 B11 C2	2	0	2
Oral presentation	B7 B8 B11 C2 C7	1	4	5
ICT practicals	B11	9	13.5	22.5
Supervised projects	B7 B8 B11 C2 C4 C6 C7	5	42.5	47.5
Personalized attention		3	0	3
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Guest lecture / keynote speech	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?.
Mixed objective/subjective test	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.
Oral presentation	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.
ICT practicals	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.
Supervised projects	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.

Personalized attention	
Methodologies	Description
Supervised projects Oral presentation Guest lecture / keynote speech	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.

UNIVERSIDADE DA CORUÑA

		Assessment		
Methodologies	**Competencies / Results**	**Description**		**Qualification**
Supervised projects	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
Oral presentation	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 |
| Mixed objective/subjective test | 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 |
| Others | | | | |

Assessment comments
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.

Sources of information	
Basic	
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Masters Dissertation/730542032
Other comments

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.