UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2021/22
Subject (*)	Advanced Shiphandling		Code	631510204
Study programme	Mestrado Universitario en Náutica e Transporte Marítimo			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	1st four-month period	First	Obligatory	6
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Ciencias da Navegación e Enxeñaría Mariña			
Coordinador	Louro Rodríguez, Julio	E-mail	julio.louro@udc.es	
Lecturers	Carracedo Dominguez, Jose Santiago Louro Rodríguez, Julio	E-mail	santiago.carracedo@udc.es julio.louro@udc.es	
Web				
General description	While ship maneuvering can be considered in principle to be an art rather than a science, the Master who knows a little bit about science, will be better at developing your art of maneuvering the ship. Knowledge of science will enable you to more easily identify the ship's maneuvering characteristics and a quick assessment of the skill needed for your control. A Master needs to understand what's going on his ship and most importantly, what will happen in a short period of future time. For this reason, the main objective of this course is knowledge of science as regards the manoeuvre of ships, with particular emphasis on the management-level competences to be cherested by a Captain in accordance with the STCW Convention. In case of students who are not in possession of the Degree in Nautical and Maritime Transport and who, therefore, the Master's degree does not enable it professionally, the teacher will be able to adapt the subject to the needs of the student.			

Contingency plan	Modifications to the contents No changes are made 2. Methodologies *Teaching methodologies that are maintained ? Objective test ? Introductory activities ? Problem solving ? Case study ? Guest lecture / keynote speech *Teaching methodologies that are modified All methodologies would be taught through Teams/Moodle, synchronously and/or asynchronously. 3. Mechanisms for personalized attention to students i. Email: Daily. Use for consultation, requesting virtual meetings to resolve questions and tracking guardianship work - Moodle: Daily. According to the needs of the students. They have "Thematic fórums? associated with the modules of the subject, to formulate the necessary consults. There are also "Specific Activity Forums", to develop "targeted discussions", through which the development of the theoretical contents of the subject is put into practice. -Teams: a weekly big group session for the advancement of theoretical content and the supervised work in the time slot assigned to the subject in the School's class calendar. Additional sessions, as demanded by the students, either in a large group or in small groups, depending on demand. This dynamic allows standardized monitoring and adjusted to the learning needs of the students to develop the work of the subject. 4. Modifications in the evaluation The evaluation methodologies and the % in the weight of the qualification are maintained, including attendance, participation and use. *Evaluation observations: The same ones that appear in the Teaching Guide remain Regarding "Students with recognition of part-time dedication and academic exemption from attendance exemption" the Professor makes available to the student the updated notes of the subject in Moodle, does not require class attendance for evaluation on both occasions in January and July and with regard to Teacher tutoring: - Email: Daily. Use for consultation, requesting virtual meetings to resolve questions and tracking guardianship work - Moodle: Daily. According to the needs of the students. They have "Thematic fórums? associated with the modules of the subject, to formulate the necessary consults. There are also "Specific Activity Forums", to develop "targeted discussions", through which the development of the theoretical contents of the subject is put into practice. -Teams: a weekly big group session for the advancement of theoretical content and the supervised work in the time slot assigned to the subject in the School's class calendar. Additional sessions, as demanded by the students, either in a large group or in small groups, depending on demand. This dynamic allows standardized monitoring and adjusted to the learning needs of the students to develop the work of the subject. 5. Modifications to the bibliography or webgraphy No changes are made

Study programme competences / results	
Code	Study programme competences / results
A10	Capacidade para manobrar e gobernar o buque en todas as condicións.
A11	Capacidade para utilizar os telemandos das instalacións de propulsión e dos sistemas e servizos de maquinaria.
A19	Capacidade para a utilización das cualidades de liderado e xestión.
B2	Capacidade para resolver problemas de forma efectiva.
B7	Capacidade para uso das novas tecnoloxías TIC e de internet como medio de comunicación e como fonte de información.
B9	Capacidade de análise e síntese.
B10	Capacidade para adquirir e aplicar coñecementos.

B11	Capacidade para organizar, planificar e resolver problemas relativos ao departamento de navegación
B12	CB6 -Posuír e comprender coñecementos que aporten unha base ou oportunidade de ser originais no desenvolvemento e/ou aplicación de ideas, a miúdo nun contexto de investigación
B13	CB7-Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornas novas ou pouco coñecidas dentro de contextos máis amplas (ou multidisciplinares) relacionados coa súa área de estudo
B14	CB8-Que os estudantes sexan capaces de integrar coñecementos e enfrontarse á complexidade de formular xuízos a partires dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vencelladas á aplicación dos seus coñecementos e xuízos
B15	CB9-Que os estudantes saiban comunicar as suas conclusións e os coñecementos e razóns últimas que as sustentan a públicos especializados e non especializados dun xeito claro e sin ambigüidades
C2	Capacidade para dominar a expresión e a comprensión de forma oral e escrita nun idioma estranxeiro
C6	Capacidade para valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.
C9	C9-Capacidade para posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, a miúdo nun contexto de investigación
C10	C10-Capacidade para aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornas novas ou pouco coñecidas dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo

Learning outcomes			
Learning outcomes	Study programme competences / results		
Capacidad para maniobrar y gobernar el buque en todas las condiciones.	AJ10	BC7 BC12 BC14 BC15	CC9
Capacidad para utilizar los telemandos de las instalaciones de propulsión y de los sistemas y servicios de la maquinaria.	AJ11		
Capacidad para la utilización de las cualidades de liderazgo y gestión.	AJ19		
Capacidad para resolver problemas de forma efectiva.		BC2	CC2 CC10
Capacidad de análisis y síntesis.		BC9	
Capacidad para adquirir y aplicar conocimientos.		BC10	
Capacidad para organizar, planificar y resolver problemas relativos al departamento de navegación.		BC11	
Capacidad para aplicar los conocimientos adquiridos y capacidad de resolución de problemas en circunstancias nuevas o poco conocidas dentro de contextos más amplios (o multidisciplinares) relacionados con el área de estudio		BC13	
Capacidad para valorar críticamente el conocimiento, la tecnología y la información disponible para resolver los problemas con los que deben enfrentarse.			CC6
Capacidad para valorar la importancia que tiene la investigación, la innovación y el desenvolvimiento tecnológico en el avance socioeconómico y cultural de la sociedad.		BC14 BC15	CC9 CC10

Contents	
Topic	Sub-topic

I. Management and development of the ship anchoring manoeuvre.	1. Review of the manoeuvre as a whole. 2. Overview of anchoring systems. 3. Anchoring procedures. 4. Analysis of the most common incidents in anchoring operations as a means of studying their prevention. 5. Limitations of the anchoring system taking as reference criteria of the regulations of the Classification Societies. 6. Election of anchoring; anchoring with one or two anchors in restricted anchorage áreas and factors involved in determining the length of the anchor chain to be used: criteria. The anchoring theory. 7. Dragging; way to untangle anchors. 8. Particularities of anchoring of large displacement vessels
II. Use and management of the ship's mooring	1. General principles of mooring with wire lines. Conventional synthetic ropes. Latest generation synthetic HMPE ropes. The hawser of synthetic material and methods of connecting it to the main line depending on whether it is wire or HMPE. 2. To make fast mooring lines: Introduction. Bitts. Types of fairleads. Chain stopper. 3. Risk in the management of the mooring lines. Dangerous areas in case of brake lines. 4. Requirements of emergency wires in terminals. 5. The effect of the elasticity of the lines on the vessel's mooring capacity 6. Guidelines for the disposal of mooring lines. 7. Windlass: Introduction. Drum divided and not divided. Windlass brake test.
III. Basics of ice navigation.	1 Types of ice and terminology. 2 Main charactiristics of Icebreaker Ships and reinforced ice-sailing vessels. 3 Preparation to enter ice areas. 4 Practical measures to take when navigating between ices or in their vicinity in ice-accumulating conditions on board. 5. Good seafaring practices in ice zones: basic general safety rules. 6. Maneuvering ships in ice-covered waters. 7. Anchoring, berthing and towing in ice zones. 8. Ship trapped in ice.
?. Standards for determining the manoeuvrability of a vessel	1. Study of IMO manoeuvrability standards: criteria for the vessel's manoeuvrability to be deemed satisfactory. Critical analysis and improvement proposals. 2. Conditions under which the IMO Standards apply. 3. Manoeuvres: the evolution curve; zig-zag manoeuvre (Kempf, 1944); modified zig-zag manoeuvre; stop test; direct spiral manoeuvre (Dieudonne, 1953); simplified spiral manoeuvre; Pull-Out manoeuvre; inertia stop test; maintenance test of the new course; parallel course manoeuvre test. 4. Stop and turn circles with various draugths and at different speeds.

VI. Management and command of ships sailing in bad weather	1. General criteria. 2. Knowledge and ability to apply decision-making techniques. 2.1 Assessment of the situation and risk. 2.2 Determination and elaboration of options 2.3 Selection of measurements; and 2.4 Assessing the effectiveness of results Preparation, implementation and supervision of standardized operational procedures. 3. Management and command of the vessel in temporary, with ability to assist an endangered vessel or aircraft, towing operations, manoeuvre a difficult-to-operate vessel so that she is not across the sea, decrease windage and make good use of bunker. 4. Importance of sailing at reduced speed to avoid damage that may be caused by the bow and stern wave of the ship.
VII. OFFSHORE OPERATIONS.	Regulations, manoeurvring, risk management: 1.- Single buoy mooring 2.- Bouy fields. 3.- FPSO/FSO/FSRU 4.- Ship to ship manoeuvring. 4.1.- Bunkering manoeuvres (oil/gas) 4.1.1.- Berthed ship 4.1.2.- Anchored ship 4.1.3.- Ships sailing 4.1.4.- Ships adrift 5.- Sailing manoeuvres
STCW COMPETENCIES ACLARATORY NOTES	1. The following 2 sub-items corresponding to A10 competence, manoeuvres and command the vessel under all conditions, are included in the competences that acquire the Subject "Maritime Safety" (631G01211) (2nd. Nautical Grade), why they are included in this Teaching Guide: .13 precautions in the handling of rescue boats or survival boats in bad weather. .14 methods for boarding survivors who are in rescue boats and survival boats. 2. The following sub-item for A10 competence is included in the competences acquired in the Subject "Nautical Simulation" (631G01402) de 4th of Nautical Grade, whose Teaching Guide is expressly stated; why it is not included in this Teaching Guide: .18 use of traffic separation scheme, manoeuvres in and around them, as well as in areas covered by maritime traffic services (MTS). 3. The following sub-item for A10 competence, are included in the competences that acquire the Subject "Hydrostatic and Stability"(4510201) Master of Nautical science, whose Teaching Guide is expressly stated; why it is not included in this Teaching Guide: .11 dry dock entry, with and without fault.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Objective test	B15 C2	4	0	4
Introductory activities	A11 A19 B13 C6	2	0	2
Problem solving	A10 B2 B7 B10 C6	10	10	20
Case study	A10 B2 B7 B10 C6	10	10	20

Guest lecture / keynote speech	A10 B2 B7 B9 B10 B11 B12 B14 C9 C10	36	60	96
Personalized attention		8	0	8
(*)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 learning assessment test. A final exam will be held to pass the entire subject by course (IN ALL CASE BEFORE THE JANUARY OPPORTUNITY). Only for students who have 90% class attendance. The required grade of this exam to pass the Subject will in any case be 5.0.
Introductory activities	The first classes of the academic year will be devoted to a series of initial activities in which the subject will be presented to the students, and will seek to determine the competences, interests and motivations that students possess for the attainment of the objectives to be achieved. This is intended to obtain relevant information that articulates teaching to promote effective and meaningful learning processes, based on students' prior knowledge.
Problem solving	Individual practical work in the classroom/home, which may require the use of ICT and/or prior or subsequent self-study/work of the student
Case study	Practical group work in the classroom/home, which may require prior or subsequent self-study/work of the student.
Guest lecture / keynote speech	Oral exposure of the subject matter (following the contents described in the Teaching Guide) supplemented by the use of audiovisual presentations and the introduction of some questions to students, to convey knowledge and facilitate learning and knowledge building. Within this dynamic, the intervention of students will be open for the realization of questions or comments, which could lead to open discussions. Most of the themes have been prepared in .ppt presentations where many original drawings have been inserted into AutoCad in order to serve the student in the task of the study, because, in many cases, with this strategy it is a question of the images speaking for themselves. These topics also contain a lot of written information that students will need to complete with the teacher's explanations in class and, if they see suitable, with the help of the recommended literature. The Subject will be taught in Spanish, but the slides will contain most of the information preferably in English in order for the student to become acquainted with the Technical-Maritime English although of course the Professor will exhibit them in Spanish. In relation to the master classes, and those aspects expressly indicated by the Professor, students should expand the content with their personal work with the help of appropriate bibliographic and tutorials. In case of using audiovisual texts or presentations, these will be made available to students long enough that they can read it in advance. NOTE: with this Methodology, the student acquires the competences of the Master studies: A10, A11, B9, B10, B11, B13, C6 and C8.

Personalized attention	
Methodologies	**Description**

Problem solving Case study	Personalized attention in the face-to-face mode to the student, understood as a support in the teaching-learning process related to the study of the subject, will be conducted in the teacher's tutoring hours in order to provide the student with guidance, support and motivation in the learning process. Teacher will attend any questions of the students in their tutoring hours. Students with part-time enrollment and academic grant of attendance exemption, as established by the "NORMA QUE REGULA EL RÉGIMEN DE DEDICACIÓN AL ESTUDIO DE LOS ESTUDANTES DE GRADO Y MASTER EN LA UDC (Arts. 2.3; 3.b; 4.3 and 7.5) (05/04/2017) may take the mid-term exams, if any, without having to attend 80% of the face-to-face classes, as long as the professors are duly informed at the beginning of the course. Regardless of the foregoing, the professors may assign these students with different assignments/ problems throughout the course to be presented during tutorials, using the TEAMS system if appropriate in the teacher's opinion. As regards the content of the objective test on both occasions, this will be the one generally established in the description of it.

Assessment			
Methodologies	Competencies / Results	Description	**Qualification**
Objective test	B15 C2	Se hará un examen para aprobar por curso de toda a materia antes da oportunidade de xaneiro SOAMENTE para aqueles alumnos que teñan un 90% de asistencia a clase. A nota mínima de esta proba obxectiva necesaria para poder superar a Asignatura será en calquiera caso de 5.0. Para os alumnos non suxetos a evaluación continua, a proba obxectiva terá un valor do 100%	50
Problem solving	A10 B2 B7 B10 C6	Na clase presentaranse problemas a resolver polo alumno, de forma individual ou grupal, na clase ou na casa.	20
Case study	A10 B2 B7 B10 C6	Presentaranse casos reais a estudiar e analizar, facendo uso das TIC, que o alumno resolverá de forma individual ou grupal, na clase ou na casa.	20
Guest lecture / keynote speech	A10 B2 B7 B9 B10 B11 B12 B14 C9 C10	A asistencia e participación a clase será valorado positivamente.	10

Assessment comments
STCW Convention 2010: The evaluation criteria referred to in Table A-II/2 of the STCW Code, and collected in the Quality Assurance System, will be taken into account when designing and carrying out the evaluation. Students with part-time enrollment and academic grant of attendance exemption, the 10% of attendance will be distributed proportionally among the rest of the criteria. The student not admitted to continuous evaluation will be evaluated in face-to-face test with a value of 100%.

Sources of information

Basic	CLARK, I.C. (2005). Ship Dynamics for Mariners. The Nautical Institute, London. CLARK, I.C. (2009). Mooring and Anchoring Vol 1. Principles and Practice. The Nautical Institute, London. HENSEN, HENK (2003). Tug Use in Port. A practical guide. The Nautical Institute, London. HOOYER, HENRY H. (1994). Behaviour and Handling of Ships. Cornell Maritime Press, Maryland. Ice Navigation in Canadian Waters (2012) OCIMF (1995). Single Point Mooring Maintenance and Operations Guide. Witherby, London. OCIMF (2008). Mooring Equipment Guidelines. Witherby, London. OCIMF (2010). Anchoring Systems and Procedures. Witherby, London. PAFFETT, J.A. (1990). Ships and Water. The Nautical Institute, London. PLUMMER, CARLYLE J. (1978). Ship Handling in Narrow Channels. Cornell Maritime Press, Cambridge. ROWE, R.W. (2000). The Shiphandler´s Guide.The Nautical Institute, London. The Nautical Institute (1986). Ice Seamanship. The Nautical Institute (1990). The Nautical Institute on Pilotage and Shiphandling, London. Toomey, P.; Lloyd, M.; House, D. and Dickins,D. (2010). The Ice Navigation Manual. Witherby. Seamanship International Ltd. VERVLOESEM, W. (2009). Mooring and Anchoring Vol. 2. Inspection and Maintenance. The Nautical Institute, London.
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Nautical meteorology in Heavy Weather/631510206
Subjects that continue the syllabus
Other comments
Knowledge relating to the subjects taught in Nautical and Maritime Transport "Maniobra I" and "Maniobra II" must be in good knowledge, for as a Professional Master, this particular subject is nothing more than a continuation particularly those relating to the level of management as provided for in the STCW Convention.