Teaching Guide				
Identifying Data				2024/25
Subject (*)	Ship Manoeuvering II		Code	631G01309
Study programme	Grao en Náutica e Transporte Marítimo			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	Third	Optional	6
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Ciencias da Navegación e Enxeñaría Mariña			
Coordinador	Pacheco Martínez, Eliseo Antonio	E-mail	eliseo.pacheco@udc.es	
Lecturers	Pacheco Martínez, Eliseo Antonio	E-mail	eliseo.pacheco@udc.es	
Web				
General description	The subjects related to the Ship Handling make up a block of essential and exclusive knowledge in the training of a Professional Sailor. It can be said that a trained and experienced Marine is the only person able to predict all the inputs and outputs in the design and development of the Maneuver of a ship. On the other hand, the consequences of a bad decision when executing a Maneuver can be serious and even catastrophic: strandings, collisions, sinking allisions, fires and explosions. An error will involve at least damage to the ship and its economic consequences: costs, P&I, delays, arrests, etc. In all of the above lies the importance of their training. Integrated in the Degree, this subject "Ship Handling II" is the deepening of the basic knowledge acquired in the subject of 2nd year "Ship Handling I", and aims to give the student a solid foundation for the subjects "Nautical Simulation" (4th year) and "Advanced Ship Handling ?(Master). In the development of the subject will take into account: STCW 1978, and the 2010 Manila Amendments IMO Model Course 1.22 Ship Simulator and Bridge Teamwork. IMO Model Course 7.01 Master and Chief Mate IMO Model Course 7.03. Officer in Charge of a Navigational Watch			

Study programme competences / results	
Code	Study programme competences / results
A59	RA6C-Identify critical situations and use available means in order to resolve them effectively.
B31	RA9H-Effectively solve practical problems associated with the subject by applying the knowledge acquired.
B33	RA11H-Develop both individual and group work
B40	RA27H?Use of IMO Standard Phrases for maritime communications, and use of written and spoken English.
B53	RA50H?Operate the remote controls of propulsion installations and machine systems and services
B57	RA58H?Using leadership and management qualities
B79	RA80H?Observe safe working practices.
C15	RA17X-Communicating effectively in a work environment.
C20	RA25X?Respond to emergencies
C22	RA29X?Manoeuvring the ship
C29	RA40X?Planning a voyage and directing navigation
C30	RA48X?Take action in case of navigational emergencies
C31	RA49X?Manoeuvring and steering the ship in all conditions

Learning outcomes			
Learning outcomes	Study programme competences / results		
RA6C-Identify critical situations and use available means in order to resolve them effectively.	A59		
RA9H-Effectively solve practical problems associated with the subject by applying the knowledge acquired.		B31	
B33 RA11H-Develop both individual and group work.		B33	
RA17X-Communicating effectively in a work environment.			C15
RA25X-Respond to emergencies.			C20
RA27H-Use of IMO Standard Phrases for maritime communications, and use of written and spoken English.		B40	
RA29X-Manoeuvring the ship.			C22
RA40X-Planning a voyage and directing navigation.			C29
RA48X-Take action in case of navigational emergencies.			C30
RA49X-Manoeuvring and steering the ship in all conditions.			C31
RA50H-Operate the remote controls of propulsion installations and machine systems and services.		B53	
RA58H-Using leadership and management qualities.		B57	
RA80H-Observe safe working practices.		B79	

Contents	
Topic	Sub-topic
Special manoeuvres.	Berthing and unberthing of various types of vessels in different wind, tide and current conditions, with and without tugboats. Berthing characteristics. Fenders. Norays. Sea trials. Autopilot. Emergency steering. Navigation in bad weather. VTSS. Symbols. RIPA. GFCS. IAMSAR. MOB. Search. Boat operations. Embarkation of castaways. Helicopter operations. Dry dock entry. Navigation in the presence of ice. Deep-sea towing. Ship to ship, single buoy berthing, multibuoy berthing. Offshore. Dynamic positioning (DP) Navigation in presence of cetaceans.

Voyage Plan. Berthing-Approaching leg.	1. Preparation. SOLAS Regulation V/29. IMO Resolution A.893(21). Information: Sailing Directions Cartographic symbology. Crew planning: crew management, rest times, leadership, communication. 2. Approaching planning. Passage from open sea to restricted waters (distances, reaction time). Preliminary checks. Information with Port Control and Pilots. SMCP. No Go Areas. No Return Point. Leading lines ECDIS. Safety Contour. 3. Anchorage planning. Anchorage selection. Study of the swinging radius. Approach to the anchorage. Anchoring sequence. Anchorage guard. 4. Pilot boarding planning. Approach maneuver. Rigging of the pilot ladder. Captain-pilot information exchange. SMCP. IMO Resolutions A.1045(27) and A.960(23). Critical situations (pilot falling into the water). 5. Tug planning. Tugs to take. Places to take/let go tugs. SMCP. Critical situations (interaction with the tug, H&S). 6. Planning river or channel leg. Checking UKC in the whole leg (squat, passing hours). Analysis of possible horizontal effects (interaction with other vessels, bank effect). Constant ROT curves. Constant rudder curves. Working with escort tugs. Passing through current lines. Engine reduction distances. Critical situations (grounding, collision). 7. Berth planning. Dock dimensions. Working with harbor tugs. Approach. Use of anchor.

SMCP.

Final configuration of lines. Calculations.

Critical situations (collision with the berth, rope breakage, H&S).

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A59 B40 B79 C20 C22 C29 C30 C31	30	60	90
Workshop	B31 B33 B40 B53 B57 C15	12	12	24
Supervised projects	A59 B31 B33 B79 C15 C22 C29 C30 C31	2	10	12
Collaborative learning	A59 B31 B33 B57 B79 C15 C29 C31	4	8	12
Objective test	A59 B31 B40 B79 C15 C29 C30 C31	4	0	4
Mixed objective/subjective test	A59 B31 B33 B40 B53 B57 B79 C15 C20 C22 C29 C30 C31	6	0	6
Personalized attention		2	0	2
(*)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 of the topics that make up the subject, also seeking the active participation of the students. Power Point presentations, technical software (CAD, Maxsurf, etc.) and videos could be used as support. Some contents can be developed in English. The teacher will have the faculty to upload notes to the Virtual Classroom. The content of these notes is intended to be a summary of the contents developed in the course, but they should not be considered as the only source of information. Students are expected to complete this information with annotations of the explanations and discussions carried out in class, as well as with the recommended bibliography.
Workshop	Practical application of the lectures, problem solving (formulas, calculations) and analysis of practical cases. Some Role Play may be applied for the explanation of real actions on board and the use of the Standard Marine Communication Phrases.
Supervised projects	An example of Supervised project could be the application of the contents of the subject in the development of a practical case of a Voyage Plan.
Collaborative learning	Procedure guided in person and/or supported with information and communication technologies, based on the organisation in small groups in which students work together in the resolution of tasks assigned by the teacher.
Objective test	A test designed to determine whether or not the answers given are correct. It can combine multiple-choice, ranking, short answer, discrimination, completion and/or association questions. It can also be constructed with only one type of any of these questions. Several of them will be used throughout the course.
Mixed objective/subjective test	These will consist of tests, generally written, consisting of theoretical questions (essay test, short answer, etc.) and practical questions (calculations, manoeuvre graphs, etc.).

Personalized attention	
Methodologies	Description

Collaborative learning	Face-to-face.
Guest lecture / keynote speech	During tutorial hours and in compliance with current health regulations.
Mixed objective/subjective test	Teams.
Supervised projects	It will depend only on the availability of the teacher.
Workshop	Email.
	The lecturer undertakes to respond as soon as possible to all queries sent. For "Students with recognition of part-time dedication and academic dispensation of exemption from attendance" the teacher may offer the possibility of online tutorials. Teacher and students will coordinate this assistance.

Assessment			
Methodologies	Competencies / Results	Description	Qualification
Collaborative learning	A59 B31 B33 B57 B79 C15 C29 C31	At the beginning of the term, small groups will be established and they will work on a project whose topic and due date will be indicated by the teacher. The work may be presented in class in an oral presentation and will be assessed according to a rubric. If the grade of the work is lower than 5.0, the students will be considered as not having passed the Continuous Assessment.	10
Objective test	A59 B31 B40 B79 C15 C29 C30 C31	If the average of the objective tests is less than 5.0, the student will be considered to have failed the Continuous Assessment.	20
Guest lecture / keynote speech	A59 B40 B79 C20 C22 C29 C30 C31	A minimum attendance of 80% will be required to qualify for the Continuous Assessment. Lack of punctuality may be a reason for not being accepted in the classroom. In order to allow attendance to certain classes with content already uploaded to Moodle, the teacher may ask for an outline, concept map or summary of the topics to be covered in the classes beforehand.	0
Mixed objective/subjective test	A59 B31 B33 B40 B53 B57 B79 C15 C20 C22 C29 C30 C31	Each combined test will consist of theoretical questions (essay test, short answer, etc.) and practical questions (calculations, manoeuvre graphs, etc.). In order for these tests to average out, the minimum mark shall be 4.0. If the average of the mixed tests is less than 5.0, the student will be considered to have failed the Continuous Assessment.	40
Supervised projects	A59 B31 B33 B79 C15 C22 C29 C30 C31	The work will be assessed according to a rubric. If the grade of the work is lower than 5.0, the student will be considered to have failed the Continuous Assessment.	30
Workshop	B31 B33 B40 B53 B57 C15	A minimum attendance of 80% will be required to qualify for the Continuous Assessment. Lack of punctuality may be grounds for not being accepted in the classroom. In order to allow attendance to certain classes with content already uploaded to Moodle, the teacher may ask for an outline, conceptual map or summary of the topics to be covered in the classes beforehand.	0

Assessment comments

Right to Continuous Evaluation (CE).
To have the right to CE, it will be necessary to have
a minimum of 80% of attendance to face-to-face classes, either expository or
interactive teaching.
Final mark for CE = (0.4*Average of mixed tests) +
(0.2*Average of objective tests) + (0.3* Supervised project mark) + (0.1* Collaborative project.mark).
Students with recognition of part-time dedication and
academic dispensation of exemption from attendance (as established in the
corresponding UdC regulations), will be able to take the EC without the need to
attend 80% of the face-to-face classes. To this end, these students will duly
inform the lecturer, at the beginning of the course, of their academic exemption
and their availability to attend classes. The teacher will agree individually
with these students the methodologies to compensate for the non-attendance to
face-to-face classes and their corresponding evaluation.
Mixed objective/subjective tests.
40% of the CE grade is obtained from the average of
the mixed tests taken (one or several) on the topics contained in the subject.
In order for these tests to be averaged together, the minimum mark will be 4.0.
If the average of the mixed tests is less than 5.0, the student will be considered
to have failed the CE.
Objective tests.
20% of the mark for the CE is obtained from the
average of the objective tests taken during the course. If this average is less
than 5.0, the student will be considered to have failed the CE. If a student
fails to attend an objective test without a justified reason, the mark for the
test will be 0. Those who justify the absence may take the test on another date
designated by the teacher.
Supervised projects.
30% of the grade of the EC is obtained from the grade
of the supervised work. The work will be assessed according to a rubric. If the
grade of the work is lower than 5.0, the student will be considered to have
failed the CE.
Collaborative project.
10% of the CE grade is obtained from the grade
obtained in the collaborative project, which will be evaluated according to a
rubric. If the grade of the work is lower than 5.0, it will be considered that
the students have not passed the CE.
1st and 2nd official exam dates.
Students who do not pass the CE (minimum attendance
and grade) or who decide not to follow it, may sit the final exams in January
and June.
The assessment of these exams will consist of a mixed
test that may consist of any type of question. The contents of these mixed
tests may cover any content of the subject.
The final mark of the exam will be the mark of this
test.
Rounding.
All marks will be based on a maximum score of 10.0. To
pass the continuous assessment and the two opportunities, the final mark must
be a 5.0. Any grade lower than this will be considered as a fail. Grades will

be rounded off to the nearest tenth. In the case of the hundredth being 5, it will be rounded up to the nearest tenth.

Academic

Dispensation, Dedication to study, Permanence and Academic Fraud.

These

issues will be governed in accordance with the current academic regulations of the UDC.

Sources of information	
Basic	A.601(15). Provision and Display of Manoeuvring Information on Board Ships. IMOMSC.137(76). Standards for Ship Maneuverability. IMOMSC/Circ.1053. Explanatory Notes to the Standards for Ship Manoeuvrability. IMOMSC.1/Circular.1228. Revised Guidance to the Master for Avoiding Dangerous Situations in Adverse Weather and Sea Conditions. IMOA.893(21). Guidelines for Voyage Planning. IMOA.1045(27). Pilot Transfer Arrangements. IMOA.960(23). Recommendations on Training and Certification and on Operational Procedures for Maritime Pilots other than Deep-Sea Pilots. IMOA.918(22). IMO Standard Marine Communication Phrases. IMOModel Course 7.01. Master and Chief Mate. 2014 Edition. IMO. London.Model Course 7.03. Officer in Charge of a Navigational Watch. 2014 Edition. IMO. London.The Shiphandler´s Guide. Rowe, R.W. The Nautical Institute, London. 2000Ship Handling. Baudu, H. 2nd ed. Dokmar. Vlissingen. 2018Maniobra de los buques. R. M. Sagarra. Edicions UPC. 1998Ship Squat and Interaction. Barrass, C.B. Witherby, Edinburgh. 2009Tug Use in Port. A practical guide. Hensen, H. 2nd. ed. The Nautical Institute. London. 2003 A Master?s Guide to Berthing. Rees, C. 3rd ed. The Standard Club. London. 2021 (recurso Web) ROM 3.1-99 Proyecto de la Configuración Marítima de los Puertos; Canales de Acceso y Áreas de Flotación. Puertos del Estado. 2000 (recurso Web)
Complementary	Behaviour and Handling of Ships. Hooyer, H. H.Cornell Maritime Press. Maryland. 1994Bridge Team Management. Swift, A.J.2nd ed. The Nautical Institute. London. 2004 Theory and Practice of Shiping Handling. Inoue K. ITU Vakfi. Istambul. 2014Ship Dynamics for Mariners. Clark, I.C. The Nautical Institute, London. 2005Mooring and Anchoring Vol 1. Principles and Practice. Clark, I.C. The Nautical Institute, London. 2009Mooring and Anchoring Vol 2. Inspection and Maintenance. Vervloesem, W.The Nautical Institute, London. 2009Maniobra de buques: teoría y práctica. Gilardoni, E. O, Retes, M. Mesa editorial. Buenos Aires. 2012 Shiphandling - Passenger Ships Without Tugs. Nash, N. Witherby Publishing Group. Livingston. 2018

Recommendations
Subjects that it is recommended to have taken before
Naval Construction/631G01105 Navigation I/631G01202 Ship's Energy and auxiliary systems/631G01204 Ship Manoeuvering I/631G01207 Ship's Theory I/631G01208
Subjects that are recommended to be taken simultaneously
Navigation II/631G01306 Collision Rules, Signals, Bouyage Systems and ISM Code/631G01303 BRM & ISM & ISPS/631G01376
Subjects that continue the syllabus
Nautical simulation/631G01402
Other comments