



Teaching Guide

Identifying Data					2024/25
Subject (*)	Ship Manoeuvring I	Code	631G01207		
Study programme	Grao en Náutica e Transporte Marítimo				
Descriptors					
Cycle	Period	Year	Type	Credits	
Graduate	2nd four-month period	Second	Obligatory	6	
Language	Spanish				
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 Pérez López, Lidia	E-mail	eliseo.pacheco@udc.es lidia.perezl@udc.es		
Web					
General description	<p>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.</p> <p>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.</p> <p>In all of the above lies the importance of their training.</p> <p>Integrated in the Degree, this subject " Ship Handling I" comprises the basic knowledge of Maneuver, which will be reviewed in more depth in the 3rd year subject " Ship Handling II".</p> <p>In the development of the subject will take into account:</p> <ul style="list-style-type: none"> STCW 1978, and the 2010 Manila Amendments IMO Model Course 7.03. Officer in Charge of a Navigational Watch IMO Model Course 1.22 Ship Simulator and Bridge Teamwork. 				

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.
B40	RA27H?Use of IMO Standard Phrases for maritime communications, and use of written and spoken English.
B45	RA38H?Applying leadership and teamwork qualities
B53	RA50H?Operate the remote controls of propulsion installations and machine systems and services
C15	RA17X-Communicating effectively in a work environment.
C18	RA21X?Planning and leading a voyage and determining the situation
C19	RA22X?Maintaining a safe navigational watch
C22	RA29X?Manoeuvring the ship
C27	RA37X?Monitoring compliance with legislative requirements
C28	RA39X?Contributing to the safety of personnel and the vessel
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	
RA17X-Communicating effectively in a work environment.			C15
RA21X-Planning and leading a voyage and determining the situation			C18
RA22X-Maintaining a safe navigational watch			C19
RA27H-Use of IMO Standard Phrases for maritime communications, and use of written and spoken English.		B40	
RA29X-Manoeuvring the ship			C22
RA37X-Monitoring compliance with legislative requirements			C27
RA38H-Applying leadership and teamwork qualities		B45	
RA39X-Contributing to the safety of personnel and the vessel			C28
RA49X-Manoeuvring and steering the ship in all conditions			C31
RA50H-Operate the remote controls of propulsion installations and machine systems and services		B53	

Contents	
Topic	Sub-topic
Topic 1: Forces controlled from the ship.	1.1. Propeller. 1.2. Rudder. 1.3. Combined effect of propeller and rudder on the ship.
Topic 2: External forces	2.1. Effect of wind on the dead ship or in motion. 2.2. Effect of current on the dead ship or in motion. 2.3. Effect of shallow water.
Topic 3: Introduction to manoeuvring.	3.1. Tuning circle. 3.2. Pivot point. Evolutive moment. 3.3. Transverse effect when ship goes astern. 3.4. Angle of approach to berth. 3.5. Turning with alternative ahead and astern telegraph orders.
Topic 4: Mooring and unmooring manoeuvre in calm conditions.	4.1. Preparations. 4.2. Berthing to a berth with a single propeller vessel. 4.3. Berthing to a berth with a twin-propeller vessel. 4.4. Departure manoeuvre
Topic 5. Mooring and unmooring manoeuvre under the influence of wind and current.	5.1. Berthing with wind. 5.2. Mooring with current. 5.3. Ciaboga with these conditions.
Topic 6. Line-handling	6.1. Lines: classification. 6.2. Breaking loads and safety. 6.3. Conservation and handling of ropes. 6.4. Operations with ropes.
Topic 7. Human factor and the manoeuvre.	7.1 Organisation on board. 7.2 English. SMCP.
Topic 8. Mooring operations.	8.1. Basic Elements. 8.2. Mooring equipment. 8.3. Lashing/unlashing procedures. H&S. 8.4. Tugging at sea. 8.5. Holding in bad weather in port.
Topic 9. Anchoring	9.1. Basic elements. 9.2. Anchoring installation. 9.3. Anchoring manoeuvre.



Topic 10. Towing	10.1. Tugboats. 10.2. Working methods 10.3. Procedures for taking on/towing out a tow. PRL.
Topic 11. Safety manoeuvres.	11.1. Manoeuvres for rescuing a person from the water.
Topic 12. Sailing	12.1. Terminology. 12.2. Theoretical principles. 12.3. Sails 12.4. Sailing manoeuvres. 12.5. Types of sailboats.
STCW	The development of the content complies with that set out in the STCW Convention and its 2010 Manila amendments in the function "Navigation, operational level", competency "Manoeuvring the ship", of table A-II/1.
The development and passing of these contents, together with those corresponding to other subjects that include the acquisition of specific competences of the qualification, guarantee the knowledge, understanding and sufficiency of the competences included in table A-II/2, of the STCW Convention, related to the management level of Chief Mate of the Merchant Navy, without limitation of gross tonnage and Master of the Merchant Navy up to a maximum of 3,000 GT.	Table A-II/2 of the STCW Convention. Specification of minimum standards of competence for masters and chief mates on ships of 500 GT and above.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A59 B31 B40 C18 C19 C22 C27 C28 C31	30	45	75
Workshop	A59 B31 B40 B45 C15 C22 C28 C31	26	26	52
Objective test	B31 B40 C15 C19 C22 C27 C28 C31	5	0	5
Collaborative learning	A59 B31 B40 B45 C15 C19 C22 C28	0	12	12
Mixed objective/subjective test	A59 B31 B40 B53 C15 C18 C19 C22 C27 C28 C31	4	0	4
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 complemented with the use of audiovisual media and the introduction of some questions addressed to the students, of each of the topics that make up the program with the objective of providing the students with the basic knowledge about the maneuvering of a ship, with the purpose of transmitting knowledge and facilitating learning.
Workshop	Training modality oriented to the application of learning in which different methodologies/tests can be combined (expositions, simulations, debates, problem solving, guided practices, etc.) through which the students develop eminently practical tasks on a specific topic, with the support and supervision of the teaching staff. Specific workshops may include knot tying classes, practice on the maneuvering simulator, practice on the Breogán ship and/or practice in the port.



Objective test	<p>A test used for the evaluation of learning, whose distinctive feature is the possibility of determining whether or not the answers given are correct. It constitutes a measurement instrument, rigorously elaborated, that allows the evaluation of knowledge, abilities, skills, performance, aptitudes, attitudes, intelligence, etc. It is applicable for diagnostic, formative and summative evaluation.</p> <p>The objective test can combine different types of questions: multiple choice, ordering, short answer, discrimination, completion and/or association questions. It can also be constructed with only one type of any of these questions.</p>
Collaborative learning	<p>A set of teaching-learning procedures guided in person and/or supported by information and communication technologies, based on the organisation of the class in small groups in which students work together to solve tasks assigned by the teacher in order to optimise their own learning and that of the other members of the group.</p>
Mixed objective/subjective test	<p>Test that integrates essay-type test questions and objective-type test questions.</p> <p>In terms of essay questions, it comprises open-ended essay questions. In addition, as objective questions, it may combine multiple-choice, ordering, short answer, discrimination, completion and/or association questions.</p>

Personalized attention

Methodologies	Description
Guest lecture / keynote speech	At the end of each teaching activity, time will be set aside for the resolution of any doubts that may be raised by each student.
Collaborative learning	Email.
Workshop	<p>The teachers will try to answer as soon as possible to all the doubts sent.</p> <p>Teams.</p> <p>It will depend on the availability of the teachers.</p> <p>In the case of "Students with recognition of part-time dedication and academic dispensation of exemption from attendance" the teacher may offer the possibility of online tutorials.</p>

Assessment

Methodologies	Competencies / Results	Description	Qualification
Guest lecture / keynote speech	A59 B31 B40 C18 C19 C22 C27 C28 C31	A minimum of 80% attendance to the lecture classes will be required to be entitled to continuous assessment.	0
Objective test	B31 B40 C15 C19 C22 C27 C28 C31	During the course there will be a series of tests which may combine different types of questions: multiple choice, ordering, short answer, discrimination, completion and/or association questions. It is also possible to construct a single type of one of these questions.	20
Collaborative learning	A59 B31 B40 B45 C15 C19 C22 C28	At the beginning of the term, small groups will be established and they will carry out a project, the topic and due date of which will be indicated by the teachers. The completion of this work is compulsory in order to pass the continuous assessment. The work will be presented in class in an oral presentation and will be evaluated according to a rubric, being necessary to achieve at least a 5/10 to pass the continuous assessment.	10
Workshop	A59 B31 B40 B45 C15 C22 C28 C31	A minimum of 80% attendance to the interactive teaching classes will be required to be entitled to continuous assessment. Attendance to the possible practicals (simulator, ship "Breogán", in port, etc.) will be compulsory. Failure to attend these practicals means failing the continuous assessment.	0



Mixed objective/subjective test	A59 B31 B40 B53 C15 C18 C19 C22 C27 C28 C31	Test that integrates essay-type test questions and objective-type test questions. In terms of essay questions, it includes open-ended essay questions. In addition, as objective questions, it may combine multiple-choice, ordering, short answer, discrimination, completion and/or association questions.	70
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Assessment comments



Right to Continuous Evaluation (CE).

In order to have the right to CE, it will be necessary to have a minimum of 80% of attendance to face-to-face classes, both expository and interactive teaching.

Final mark for CE = $(0.7 \times \text{Average of mixed tests}) + (0.2 \times \text{Average of objective tests}) + (0.1 \times \text{Collaborative work mark})$.

Students with recognition of part-time dedication and academic dispensation of exemption from attendance (as established in the corresponding regulations of the UdC), may take the CE 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 dispensation and their availability to attend classes. The teachers will agree individually with these students on methodologies to compensate for the non-attendance to face-to-face classes and their corresponding evaluation.

Mixed tests.

During the CE there will be one or several mixed tests on the topics of the subject content. The final mark of the mixed exam will be the average of the different mixed exams that may take place during the course, but in order for these exams to be averaged together, a minimum mark of 4,5 will be required in each one. Whether several mixed tests are taken or only one is taken, the average of those, or the mark of this one, will be 70% of the CE qualification.

Those students who have not achieved a 4,5 in a mixed test, but have passed all the other assessment activities, may recover that mixed test in the May test.

Objective tests.

20% of the qualification is obtained from the average of the objective tests taken during the course. If any student fails to take an objective test without a justified reason, the mark for the test will be 0. Those who justify their absence will be able to take the test on another date designated by the teachers.

Collaborative work.

The remaining 10% will depend on the grade obtained in the work done collaboratively in small groups. The completion of this work is compulsory in order to pass the continuous assessment. The work will be presented in class in an oral presentation and will be evaluated according to a rubric, being graded out of 10 points, being necessary to achieve at least a 5/10 to pass the continuous assessment.

Knots elimination test.

There will be a test to demonstrate the knowledge of the basic knots in a practical way which, although it is not included in the final grade, is eliminatory, being necessary to pass it in order to pass the subject.

Official 1st and 2nd opportunity exams.

Students who do not pass the CE (minimum attendance and qualification) or who decide not to follow it, may sit the final exams in May and July.

The assessment of these examinations shall consist of a mixed test which may consist of any type of question. The contents of these mixed tests may cover any content of the subject.

The final grade of this exam will be the grade of this test.

Options for students who have not achieved a 4.5 in a mixed test, but who have passed all the other activities of the EC:

Option 1: the 1st opportunity exam in May will be divided into blocks covering the same content as the EC mixed exams. Students who take only one block in May for retake must obtain a minimum mark of 4.5 in that block in order to pass the EC. If the mark obtained is lower than 4.5, they will have to take the second opportunity. If the mark obtained in this block is 4.5 or higher, this mark will be weighted with the rest of the activities carried out during the EC. The resulting weighting will be the final grade of the exam.

Option 2: students with a mixed test that has not reached 4.5 may sit the whole of the May test, the mark of this test being the mark of the 1st opportunity.

The 2nd exam will cover all the contents of the subject, and no previous grade will be retained.

The May test will be divided into blocks covering the same content as the EC mixed tests. Students who have not achieved a 4 in any of the mixed tests, but who have passed all the rest of the CE activities, may sit this test.

As in the CE, in order to pass the subject, students who have not passed it will take a knots test, which will be eliminatory.

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. A mark 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	<ul style="list-style-type: none">- Ardley, R.A.B. (1959). Pilotaje en puerto. Madrid: Ediciones Garriga.- Barbudo Escobar, Ignacio (2004). Tratado de maniobra. Tomo I Fundamentos de maniobra. Tomo II Maniobras a bordo y en la mar. Madrid: Fragata- House, David (2007). Ship handling: theory and practice. 1st ed. Boston: Elsevier- Mari Sagarra, Ricard (1999). Maniobra de los buques. 3ª ed. Barcelona: Ediciones UPC
Complementary	

Recommendations

Subjects that it is recommended to have taken before

Naval Construction/631G01105

Subjects that are recommended to be taken simultaneously

Navigation I/631G01202

Ship's Energy and auxiliary systems/631G01204

Maritime Technical English/631G01275

Subjects that continue the syllabus

Nautical simulation/631G01402

Ship Manoeuvring II/631G01309

Other comments

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.