Teaching Guide				
Identifying Data				2023/24
Subject (*)	Tankers		Code	631G01308
Study programme	Grao en Náutica e Transporte Marítimo			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	Third	Optional	6
Language	Spanish			
Teaching method	Face-to-face			
Prerequisites				
Department	Ciencias da Navegación e Enxeñaría Mariña			
Coordinador	Louro Rodríguez, Julio	E-mail	julio.louro@udc.es	
Lecturers	Louro Rodríguez, Julio Prieto Cabo, Verónica	E-mail	julio.louro@udc.es v.prietoc@udc.es	
Web				
General description	Comply with the competences established in: Table A-V/1-1-1. Specification of mínimum standard of competence in basic training for oil and chemical tanker cargo operations. Table A-V/1-2-1. Specification of mínimum standard of competence in basic training for liquefied gan tanker cargo operations. Section A-V/2: Mandatory mínimum requiriments for the training and qualification of masters, officers, rattings and other personnel on passenger ships, of IMO STCW Code.			

Study programme competences	
Code	Study programme competences
B61	RA62H?Contributing to the safe operation of tanker and chemical tanker cargoes
B62	RA63H?Take precautions to prevent hazards in tanker operations.
B63	RA64H?Take occupational safety and health precautions and measures on board tankers.
B64	RA65H?Conduct fire-fighting operations on tankers.
B65	RA66H?Respond to emergencies on board tankers.
B66	RA67H?Take precautions to prevent pollution of the environment due to the discharge of oil or chemicals.
B67	RA68H?To contribute to the safe operation of liquefied gas tankers.
B68	RA69H?Take precautions to prevent hazards in the operation of liquefied gas tankers.
B69	RA70H?Take occupational safety and health precautions and measures on board liquefied gas tankers.
B70	RA71H?Carry out fire-fighting operations on liquefied gas tankers.
B71	RA72H?Respond to emergencies on board liquefied gas tankers.
B72	RA73H?Take precautions to prevent pollution of the environment due to the release of liquefied gases.
B100	RA103H?Contributing to the implementation of emergency plans and procedures to assemble and evacuate passengers
B101	RA104H?Assisting passengers on their way to assembly and embarkation stations
B102	RA105H?Organise on-board emergency procedures
B103	RA106H?Optimising the use of resources
B104	RA109H?Establishing and maintaining effective communications
C38	RA107X?Directing emergency intervention
C39	RA108X?Directing passengers and other staff members in emergency situations

Learning outcomes	
Learning outcomes	Study programme competences

RA62H-Contributing to the safe operation of tanker and chemical tanker cargoes		B61	
RA63H-Take precautions to prevent hazards in tanker operations.		B62	
RA64H-Take occupational safety and health precautions and measures on board tankers.		B63	
RA65H-Conduct fire-fighting operations on tankers.		B64	
RA66H-Respond to emergencies on board tankers.		B65	
RA67H-Take precautions to prevent pollution of the environment due to the discharge of oil or chemicals.		B66	
RA68H-To contribute to the safe operation of liquefied gas tankers.		B67	
RA69H-Take precautions to prevent hazards in the operation of liquefied gas tankers.		B68	
RA70H-Take occupational safety and health precautions and measures on board liquefied gas tankers.		B69	
RA71H-Carry out fire-fighting operations on liquefied gas tankers.		B70	
RA72H-Respond to emergencies on board liquefied gas tankers.		B71	
RA73H-Take precautions to prevent pollution of the environment due to the release of liquefied gases.		B72	
RA103H-Contributing to the implementation of emergency plans and procedures to assemble and evacuate passengers		B100	
RA104H-Assisting passengers on their way to assembly and embarkation stations		B101	
RA105H-Organise on-board emergency procedures		B102	
RA106H-Optimising the use of resources		B103	
RA109H-Establishing and maintaining effective communications		B104	
RA107X-Directing emergency intervention			C38
RA108X-Directing passengers and other staff members in emergency situations			C39

Contents	
Topic	**Sub-topic**

Passenger and ro-ro ships. Chapter V, section A-V/2. IMO model courses 1.29 (2000 ed.), updated 1.41 and 1.42 (2018 ed.),	- Emergency management and human behaviour including training on passenger and cargo safety and hull integrity. Passenger communication S.M.C.P. (Standard communication phrases on board). Evacuation and emergency exits - Drills and control plans Door and ramp opening and closing procedures. Individual rescue equipment. . Passenger evacuation . Table of duties. The development of these subtopics complies with column 2, Knowledge, Understanding and Sufficiency, of the STCW Convention, as amended by Manila 2010, of the following tables and schedules: Minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships. Table A-V/2.1. Specification of the minimum level of competence in crowd management training for passenger ships Table A-V/2.2. Specification of the minimum level of competence in passenger ship crisis management and human behaviour (1): The achievement of the competencies set out in Column 1 of the respective STCW Tables is supplemented by the completion of the related content in the subjects complementary to the STCW Table A-V/2.2: -Maritime Safety -Maritime Technical English - Maritime Radiocommunications - BRM&ISM&ISPS - Special Transports and Nautical Simulation (to clarify that the contents of these subjects will be taken in the 4th year of the Degree in Nautical and Transport).

2. Basic training for cargo operations on liquefied gas tankers Table A-V/1-2-1, STCW. IMO Model Course 1.04 3. Basic training for cargo operations on tankers and chemical tankers Table A-V/1-1-1, STCW. IMO Model Course 1.01	1.- Basic knowledge of the ship: types of ships, general layout and construction. 2.- Basic knowledge of loading operations: pump systems, lines, valves, tank cleaning, etc. 3.- Basic knowledge of the physical properties of crude oil and chemical substances. 4.- Knowledge and understanding of safety culture and management. 5.- Basic knowledge of the hazards associated with the ship's operations. 6.- Basic knowledge of hazard control: inerting, ventilation, segregation, etc. 7.- Material Safety Date Sheet (MSDS). 8.- Gas measuring instruments and similar equipment. 9.- Emergency operations 10.- Fire prevention and fire fighting 11.- Pollution prevention 12.- Risks related to pressure and low temperatures The development of these sub-items complies with column 2, Knowledge, Understanding and Sufficiency, of the STCW Convention, as amended by Manila 2010, of the following table: Table A-V/1-1-1. Specification of minimum standards of competence in basic training for cargo operations on oil tankers and chemical tankers. Table A-V/1-2-1. Specification of the minimum standards of competence in basic training for cargo operations on liquefied gas carriers This part of the course is linked to the successful completion of the subjects of Naval Hygiene and Occupational Risks, as well as the subject of Maritime Safety.

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Guest lecture / keynote speech	B104 B103 B102 B101 B100 B72 B69 B68 B67 B66 B63 B62 B61 C38 C39	24	48	72
Laboratory practice	B61 B64 B65 B67 B68 B70 B71	16	32	48
Simulation	B61 B62 B66 B67 B68	8	8	16
Mixed objective/subjective test	B104 B103 B102 B101 B100 B72 B69 B68 B67 B66 B63 B62 B61 C38 C39	12	0	12
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	There will be master sessions, including professionals of recognised prestige

Laboratory practice	Practices will be carried out with safety and rescue equipment used on this type of vessel. Operational practice will also be carried out in the simulator.
Simulation	Operational practices will be carried out in the simulator.
Mixed objective/subjective test	Partial tests will be taken on each of the three subjects and a final joint test on the whole subject. Both ordinary and extraordinary exams will follow the same format.

Personalized attention	
Methodologies	**Description**
Guest lecture / keynote speech Laboratory practice	Apart from the hours of tutorials established for all students of the subject, 2 hours are established for students with needs.

Assessment			
Methodologies	**Competencies**	**Description**	**Qualification**
Guest lecture / keynote speech	B104 B103 B102 B101 B100 B72 B69 B68 B67 B66 B63 B62 B61 C38 C39	Se valorará hasta con un 20% la asistencia.	10
Mixed objective/subjective test	B104 B103 B102 B101 B100 B72 B69 B68 B67 B66 B63 B62 B61 C38 C39	Se valorara con un 80% el examen escrito	90
Laboratory practice	B61 B64 B65 B67 B68 B70 B71	Se valorará la asistencia a dichas prácticas.	0
Simulation	B61 B62 B66 B67 B68		0
Others			

Assessment comments

Column 4, Criteria for assessing competence, of the STCW Convention will be taken into account:
Table A-V/1-1-1. Specification
of mínimum standard of competence in basic training for oil and chemical tanker
cargo operations.
Table A-V/1-2-1. Specification
of mínimum standard of competence in basic training for liquefied gan tanker
cargo operations.
Section A-V/2: Mandatory
mínimum requiriments for the training and qualification of masters, officers, rattings
and other personnel on passenger ships,
of IMO STCW Code.
In order to obtain the Certificate of basic training for cargo operations on tankers and chemical tankers and cargo operations on tankers for the transport of liquefied gas and for the Passenger Ship Certificate, the three certificates being completely independent, there will be partial mixed tests at the end of each subject as well as a final mixed test in the official calls for the 1st opportunity and 2nd opportunity, with 90% attendance being compulsory during the course.
The internships are mandatory to obtain the Certificates
Regarding the
sanctions applicable for the commission of serious misconduct, article 11 of
the Student Disciplinary Regulations of the University of A Coruña, approved by
the Governing Council on 02/27/2023, in June 2023 point b) was modified as
follows:
b) The
fraudulent completion of exams or assessment activities, once confirmed, will
result directly in a failing grade in the respective exam session: the student
will be graded as "fail" (numerical grade of 0) in the corresponding
academic year's exam session, whether the misconduct occurs in the first
opportunity or the second. In this regard, their grade will be modified in the
first opportunity's record, if necessary.

Sources of information

Basic	BIBLIOGRAFÍA BÁSICA DA ASIGNATURA:BUQUES TANQUES PETROLEIROSManual de Carga y Seguridad para Buques Tanques IMOGuía Internacional para Petroleros y Terminales, IMOLavado con crudo y Empleo del Gas Inerte. .Moreno Isaac.Tanker Handbook for Deck. Officers. Batist, C.Supertankers, Anatomy & Operations. Solly Raymond.Practical Petroleum Tables for ship use. ASTMCódigo para la construcción y equipo de Buques Tanques Petroleros.Tanker Cargo Handling. R Terford.SOLAS IMO. MARPOL. IMOSafety in Oil Tankers(International Chamber of Shipping, Carthusian Court, 12 Carthusian Street, London EC1M 6EB).ICS/OCIMF/IAPH, International Safety Guide for Oil Tankers and Terminals(Witherby and Co. Ltd., 32/36 Aylesbury Street, London ECIR OET, U.K.) (ISBN ()-948691-62-X) Fith Edition.International Chamber of Shipping/Oil Companies International Marine Forum, Ship to Ship Transfer Guide (Petroleum)(Witherby and Co. Ltd., London) (ISBN 0-948691-49-2)International Chamber of Shipping Oil Companies International Marine Forum Clean Seas Guide for Oil Tankers(Retention of oíl residuos on board) (Witherby and Co. Ltd., London) (ISBN 0-948691-15-8) ICS, Guide to Helicopter/Ship Operations. Contaminación Marina. Instituto Marítimo Español. 2008. Revista Naval, Carlos Rodríguez Vidal, 2003 Manual de Lavado con crudo y gas inerte. José Luís Chinea López, Vicente Hernández Santaella. COMME. Gas inerte, limpieza de tanques y desgasificación en buques petroleros. David Dios Lustres. El buque tanque. Capitán I.G. Reigadas. Manual del buque tanque. José Eloy García Tobío. Los buques tanque y su clasificación. Guillermo Ricardo Gadea. Gestión técnica de superpetrolero tipo. Nuria Vázquez Couso. Gas inerte, limpieza de tanques y desgasificación en buques petroleros. David Dios Lustres. H2S, Pocket Safety Guide.Witherby Seamanship International Ltd. 2010. Crude Oil Tanker Basics: The theory and practice of crude oil cargo operations. Captain Paul Armitage. Witherby Seamanship International Ltd. 2009. Manual of oil tanker operations. Dr. Raymond Solly, Captain Quentin Cox and John Onslow. 2011. Brown, Son & Ferguson, LTD, Glasgow. BUQUES TANQUES QUIMIQUEROS Código Internacional para la Construcción y Equipo de Buques para el Transporte de ProductosQuímicos peligrosos a Granel. IMO.Guía GESAMP. IMO/FAO/UNESCO/WNO/IAEA/UN/WHO.Transporte sin Riesgo de Sustancias Químicas y Peligrosas MOCódigo Internacional para el transporte de Mercancías Peligrosas. IMOTransporte de productos Químicos a Granel. J.R. Bustos y R. GarcíaSpecializes Training for Chemical Tankers. IMOSOLAS. IMOMarpol. IMO Convenio Internacional para la Seguridad de la Vida Humana en el Mar, Convenio SOLAS. 2007 Convenio Internacional sobre normas de Formación, Titulación y Guardia para la Gente de Mar (STCW/95, Convenio de Formación). 2007, Código Internacional para la construcción y el equipo de buques que transporten gases productos químicos peligrosos a granel. (Código CIQ). OMI. 2007. Convenio Internacional para prevenir la contaminación por los Buques, 1973/1978 (Convenio MARPOL). 2007 Convenio Internacional sobre cooperación, preparación y lucha contra la Contaminación por Hidrocarburos, 1990 (OPRC 90). 2007 Tanker Safety Guide: Chemical Liquids. International Chamber of Shipping. Third Edition. 2002. Protocolo relativo a la intervención en alta mar en casos de contaminación del mar por sustancias distintas de los hidrocarburos). Curso Modelo 1.04: Formación especializada en operaciones de quimiqueros. Edición 1999. OMI. Curso de formación para tripulantes de buques químicos. Ramón Freire Piñeiro. Lavado de tanques en quimiqueros. Nélida González García. 2001. Proyecto Fin de Carrera Trabajo para obtención título Capitán. Juan Antonio Herrero Rodríguez. Morrazo Parada María, ?Viaje 84/147?. Trabajo para la obtención del título de Piloto. 2005. M/T Castillo de Monterreal?. Lidia Pérez López. Chemical Tanker: A pocket safety guide. 2006. Seamanship International. Whiterby publishing group. B/T Mar María. José Antonio Gómez Domínguez. 2009. Trabajo Fin Carrera BUQUES TANQUES GASEIROS Código Internacional para la Construcción y Equipo de Buques que Transportan Gases Licuados aGranel. IMOGas and Chemical Ships Handbook. ICSPrincipio y Manejo del Gas Licuado. SIGTTO.Gas Licuado Principio del Manejo y Transporte. CARRO FDEZ.Liquified Petroleum Gas Tanker Practice. WOOLCOTT.Gas Natural Licuado, Particularidades de su Transporte por Mar. Subsecretaria de la MMECode for existing Ships carrying L.G. in Bulk. IMO Convenio Internacional para la Seguridad de la Vida Humana en el Mar, Convenio SOLAS Convenio Internacional sobre normas de Formación, Titulación y Guardia para la Gente de Mar (STCW/95, Convenio de Formación). Código Internacional para la construcción y el equipo de buques que transporten gases licuados a granel (Código CIG). OMI. Tanker Safety Guide: LiquifiedGas. The International Chamber of Shipping (ICS). Tanker Safety Training: Liquiefied Gas, specialised level. Seamanship International. 2007. Curso de termodinámica aplicada. Subsecretaría Marina Mercante. Principios para el manejo del gas licuado. Witherby and Co, Ltd. LNG, vessels ICS, Londres. Shipping world and shipbuider, revista. El gas natural y sus apliaciones. Gas Natural, SA. Madrid. Curso de gaseros. Francisco Rodríguez Doval. ISM LNG ?Hispania Spirit?. Pablo Nieto Moares. 2008. Planificación y organización de

las operaciones de carga y descarga a bordo del LPG ?Celanova?. Alsira Salgado Don. 2007. Tanker Jetty Safety. Management of the ship/shore interrace.Seamanship International. 2007.

Complementary	Apuntes del profesor.Apuntes del profesor.

Recommendations
Subjects that it is recommended to have taken before
Química/631211110 Naval Hygiene and Risks at Work/631G01104 Maritime Safety /631G01211 Maritime Technical English/631G01275
Subjects that are recommended to be taken simultaneously
Ship's Energy and auxiliary systems/631G01204 Marine and atmospheric pollution/631G01304
Subjects that continue the syllabus
Other comments
?As stated in the different regulations of application for university teaching, the gender perspective must be incorporated in this matter (Non-sexist language will be used, bibliography of authors of both sexes will be used, te intervention in class of students will be encouraged.Work will be done to identify and modify prejudices and sexist attitudes and will influence the environment to modify them and promote values of respect and equality.Situations of discrimination based on gender should be detected and actions and measures proposed to correct them?.