



## Teaching Guide

Identifying Data					2023/24
Subject (*)	Tanker and Passenger Ships	Code	631G03020		
Study programme	Grao en Máquinas Navais				
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	Prieto Cabo, Verónica	E-mail	v.prietoc@udc.es		
Lecturers	Baaliña Insua, Alvaro Bouzon Otero, Rebeca Prieto Cabo, Verónica Romero Gomez, Javier	E-mail	alvaro.baalina@udc.es rebeca.bouzon@udc.es v.prietoc@udc.es j.romero.gomez@udc.es		
Web					
General description	It treats to give fulfillment to the formative requirements of the STCW Convention about professional courses of tanker ships (basic), and passenger ships				

## Study programme competences

Code	Study programme competences
A1	CE01 - Realizar unha garda de máquinas segura
A8	CE08 - Vixiar o cumprimento das prescricións legislativas.
A10	CE10 - Utilizar os sistemas de comunicación interna.
A12	CE12 - Garantir o cumprimento das prescricións sobre prevención da contaminación.
A13	CE13 - Prevención, control e loita contra incendios a bordo.
A16	CE16 - Aplicar as calidades de liderado e de traballo en equipo.
A17	CE17 - Contribuír á seguridade do persoal e do buque
A56	CE56 - Contribuír á seguridade das operacións de carga en petroleiros e quimiqueros.
A57	CE57 - Tomar precaucións para previr os riscos nas operacións dos buques tanque.
A58	CE58 - Tomar precaucións e medidas de seguridade e saúde no traballo a bordo de buques tanque.
A59	CE59 - Levar a cabo operacións de loita contra incendios en buques tanque
A60	CE60 - Responder a emerxencias a bordo de buques tanque.
A61	CE61 - Tomar precaucións para previr a contaminación del medio ambiente debida a la descarga de hidrocarburos o produtos químicos
A62	CE62 - Contribuír al funcionamento seguro de los buques tanque para el transporte de gas licuado.
A63	CE63 - Tomar precaucións para previr os riscos nas operacións dos buques tanque para o transporte de gas licuado.
A64	CE64 - Tomar precaucións e medidas de seguridade e saúde no traballo a bordo de buques tanque para o transporte de gas licuado.
A65	CE65 - Levar a cabo operacións de loita contra incendios en buques tanque para o transporte de gas licuado.
A66	CE66 - Responder a emerxencias a bordo de buques tanque para o transporte de gas licuado.
A67	CE67 - Tomar precaucións para previr a contaminación do medio ambiente debida ao desprendemento de gases licuados.
A68	CE68 - Organizar os procedementos de emerxencia de a bordo.
A69	CE69 - Optimizar a utilización dos recursos.
A70	CE70 - Dirixir a intervención en caso de emerxencia.
A71	CE71 - Dirixir aos pasaxeiros e aos demais membros do persoal en situacións de emerxencia.
A72	CE72 - Establecer e manter comunicacións eficaces.
A86	CE86 - Operar, reparar, manter e optimizar as instalacións auxiliares dos buques que transportan cargas especiais, tales como quimiqueros, LPG, LNG, petroleiros, cementeros, Ro- Ro, Pasaxe, botes rápidos, etc.
A99	CE99 - Ter a capacidade para exercer como Oficial de Máquinas da Mariña Mercante, unha vez superados os requisitos esixidos pola Administración Marítima.



A100	CE100 - Ter a capacidade para exercer como oficial ETO da Mariña Mercante, unha vez superados os requisitos esixidos pola Administración Marítima.
B2	CB2 - Aplicar os coñecementos no seu traballo ou vocación dunha forma profesional e posuír competencias demostrables por medio da elaboración e defensa de argumentos e resolución de problemas dentro da área dos seus estudos
B7	CG02 - Resolver problemas de forma efectiva.
B8	CG03 - Comunicarse de maneira efectiva nunha contorna de traballo.
B9	CG04 - Traballar de forma autónoma con iniciativa.
B10	CG05 - Traballar de forma colaborativa.
B11	CG06 - Comportarse con ética e responsabilidade social como cidadán e como profesional.
B12	CG07 - Capacidade para interpretar, seleccionar e valorar conceptos adquiridos noutras disciplinas do ámbito mariño, mediante fundamentos físico-matemáticos.
B13	CG08 - Capacidade para a aprendizaxe de novos métodos e teorías, que lle doten dunha gran versatilidade para adaptarse a novas situacións.
B14	CG09 - Comunicar por escrito e oralmente os coñecementos procedentes da linguaxe científica.
B15	CG10 - Capacidade para resolver problemas con iniciativa, toma de decisións, creatividade, razoamento crítico e de comunicar e transmitir coñecementos habilidades e destrezas.
B16	CG11 - Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.
B17	CG12 - Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.
C1	CT01 - Expresarse correctamente, tanto de forma oral como escrita, nas linguas oficiais da comunidade autónoma.
C3	CT03 - Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.
C4	CT04 - Desenvolverse para o exercicio dunha cidadanía respectuosa coa cultura democrática, os dereitos humanos e a perspectiva de xénero.
C5	CT05 - Entender a importancia da cultura emprendedora e coñecer os medios ao alcance das persoas emprendedoras.
C7	CT07 - Desenvolver a capacidade de traballar en equipos interdisciplinares ou transdisciplinares, para ofrecer propostas que contribúan a un desenvolvemento sostible ambiental, económico, político e social.
C9	CT09 - Ter a capacidade de xestionar tempos e recursos: desenvolver plans, priorizar actividades, identificar as críticas, establecer prazos e cumprilos.

## Learning outcomes

Learning outcomes	Study programme competences
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Sailing, with safety and respect to the environment protection, in tanker ships	A1 A8 A10 A12 A13 A16 A17 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A86 A99 A100	B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17	C1 C3 C4 C5 C7 C9
The result of the learning: Sailing with safety and respect to the environment protection on tanker ships, fulfils with the obtaining of the competitions established in the Column 1 of the Tables STCW: A-V/1-1-1; A-V/1-2-1;	A1 A8 A10 A12 A13 A16 A17 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A86 A99 A100	B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17	C1 C3 C4 C5 C7 C9



<p>Knowledge and skills in managing crowds, covering the mandatory competences and the required knowledge, understanding and proficiencies specified in paragraph 3 of section A-V/2 and table A-V/2-1 of the STCW code.</p> <p>Training in crisis management during emergency situations on board passenger ships as specified in paragraph 4 of section A-V/2 and table A-V/2-2 of STCW Code.</p>	A8	B2	C1
	A10	B7	C3
	A16	B8	C4
	A17	B9	C5
	A69	B10	C7
	A70	B11	C9
	A71	B12	
	A72	B13	
	A86	B14	
	A99	B15	
	A100	B16	
		B17	

Contents	
Topic	Sub-topic
<p>Basic Training for Oil and Chemical Tanker Cargo Operations.</p> <p>Table A-V/1-1-1, STCW.</p> <p>IMO Model Course 1.01.</p>	<p>FOR OIL, GAS AND CHEMICAL PRODUCTS:</p> <p>1.- Regulations and Codes of practices</p> <p>2.- Tankers ships equipment and Project</p> <p>3.- Cargo properties.</p> <p>4.- Ship's operations</p> <p>5.- Risks prevention.</p>
<p>Basic Training for Liquefied Gas Tanker Cargo Operations.</p> <p>Table A-V/1-2-1, STCW.</p> <p>IMO Model course 1.04.</p>	<p>6.- Occupational Safety and Health</p> <p>7.- Closed spaces</p> <p>8.- Measures Equipments</p> <p>9.-a Emergency operations</p> <p>10.- Fire prevention and fire fighting</p> <p>11.- Pollution prevention.</p>



<p>Buques de pasaxe e ro-ro. Capítulo V, sección A-V/2.</p> <p>Cursos modelo OMI 1.29 (ed. 2000), actualización 1.41 e 1.42 (ed 2018),</p>	<p>The development of these sub-topics (1) fulfils with the column 2, Knowledge, Understanding and Proficiency, of the STCW Convention, modified by Manila 2010, of the following Tables:</p> <p>Table A-V/1-1-1. Specification of minimum standard of competence in basic training for oil and chemical tanker cargo operations</p> <p>Table A-V/1-2-1. Specification of minimum standard of competence in basic training for liquefied gas tanker cargo operations</p> <p>Table A-V/2.- Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on passenger ships.</p> <p>(1): The obtaining of the competences established in the Column 1 of the respective Tables STCW, complete with overcoming of the contents related in the complementary matters to this:</p> <p>? Naval hygiene and Risks at work.</p> <p>? Chemistry.</p> <p>? Maritime Safety</p> <p>? Thermodynamics and Engineering Thermodynamics.</p>
<p>Passenger ships and ro-ro. Chapter V, section A-V/2</p> <p>IMO model courses 1.29 (ed. 2000), 1.41 y 1.42 (ed 2018),</p>	<p>-Proficiency in crisis management and human behaviour training including passenger safety, cargo safety and hull integrity training. Communication with passengers (standard maritime communication phrases-SMCP). Abandonment and emergency exits.</p> <p>- Emergency plans and procedures. Shipboard emergency drills. Procedures for lowering and hoisting ramps, setting up and stowing retractable vehicle decks. Individual safety equipment, emergency signals. Evacuation. Function table.</p>

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A1 A8 A10 A12 A13 A16 A17 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A86 A99 A100 B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 C1 C3	30	60	90



Laboratory practice	A1 A8 A10 A12 A13 A16 A17 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A86 A99 A100 B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 C1 C3 C4 C5 C7 C9	16	12	28
Simulation	A1 A10 A12 A16 A17 A56 A57 A58 A60 A61 A62 A63 A66 A67 A99 A100 B2 B7 B8 B9 B10 B12 B15 B16 B17	8	8	16
Mixed objective/subjective test	A100 A99 A86 A72 A71 A70 A69 A68 A67 A66 A65 A64 A63 A62 A61 A60 A59 A58 A57 A56 A17 A16 A13 A12 A10 A8 A1 B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17	6	0	6
Objective test	A100 A99 A86 A72 A71 A70 A69 A68 A67 A66 A65 A64 A63 A62 A61 A60 A59 A58 A57 A56 A17 A16 A13 A12 A10 A8 A1 B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17	8	0	8
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	They will realise guest lecture / keynote speech., including professionals of recognised prestige. A1, A10, A12, A17, A22, A23, A25, A27, A29, A33, A35, B1, B7, B8, B11, B12, C1 and C2.
Laboratory practice	They will realise practices with safety and rescue equipments used in this type of tanker ships. Likewise, they will realise operational practices in the simulator. A1, A10, A12, A23, A25, A27, B1, B6, B8, B11, B12, C1 and C2.
Simulation	Operational practice shall be carried out on the liquid cargo simulator. A1 A10 A12 A16 A17 A56 A57 A58 A60 A61 A62 A63 A66 A67 A99 A100 B2 B7 B8 B9 B10 B12 B15 B15 B16 B17
Mixed objective/subjective test	There will be a partial test on the subject Familiarisation of oil and chemical tankers . Both ordinary and extraordinary exams will be held in the same format. B2, B3, B5, B7, B13, B14, B15, B16, C1 and C2. In this context, the specific competences of the degree acquired in laboratory practicals and lectures will be applied.



Objective test	Objective tests will be carried out at each official convocation corresponding to the part of gas tankers and passenger ships respectively, therefore no partial examinations will be carried out in these parts of the subject. The specific competences of the qualification acquired in laboratory practices and master classes will be applied.
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**Personalized attention**

Methodologies	Description
Guest lecture / keynote speech	In addition to the hours of tutorials established for all the students of the matter, establish 2 hours for students with needs.
Laboratory practice	Students with part-time enrollment and academic grant of attendance exemption, as established by the &quot;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.

**Assessment**

Methodologies	Competencies	Description	Qualification
Guest lecture / keynote speech	A1 A8 A10 A12 A13 A16 A17 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A86 A99 A100 B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 C1 C3	It will value the assistance to guest lectura / Keynote speech	5
Mixed objective/subjective test	A100 A99 A86 A72 A71 A70 A69 A68 A67 A66 A65 A64 A63 A62 A61 A60 A59 A58 A57 A56 A17 A16 A13 A12 A10 A8 A1 B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17	Both the mixed test and the objective test will be assessed with a maximum of 90% in the written exam. See Observations on evaluation.	90
Laboratory practice	A1 A8 A10 A12 A13 A16 A17 A56 A57 A58 A59 A60 A61 A62 A63 A64 A65 A66 A67 A68 A69 A70 A71 A72 A86 A99 A100 B2 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 C1 C3 C4 C5 C7 C9	It will value the assistance to guest lectura / Keynote speech	5



Simulation	A1 A10 A12 A16 A17 A56 A57 A58 A60 A61 A62 A63 A66 A67 A99 A100 B2 B7 B8 B9 B10 B12 B15 B16 B17	STCW-related practices are mandatory in their entirety.	0
Others			

### Assessment comments

The system of evaluation fulfils with the assessment criteria of the competence collected in the Column 4 of the following Tables of the STCW Convention, modified by Manila 2010:

- Table A-V/1-1-1. Specification of minimum standard of competence in basic training for oil and chemical tanker cargo operations

- Table A-V/1-1-2. Specification of minimum standard of competence in advanced training for oil tanker cargo operations

The assessment criteria contemplated in the Tables A-III/1 of the STCW Code, and collected in the System of Guarantee of Quality, will take into account to design and realise the evaluation.

The partial exams form part of the continuous evaluation, therefore to be able to take part of them, the assistance to the guest lectura / Keynote speech must be of 90%.

STCW-related practices, corresponding to the simulation methodology, are mandatory in their entirety.

Practices includes, whenever it was possible, the visit in the sailboats to tanker ships berthed at terminal: oil, gas and chemicals tankers or vessels berthed.

In order to obtain the Certificate of basic training for cargo operations on tankers and chemical tankers, a partial mixed test will be carried out at the end of this part of the subject, with 90% attendance being necessary during the course. In order to obtain the Certificate of basic training for cargo operations on liquefied gas tankers and for the Passenger Ship Certificate, both certificates being completely independent, an objective test will be carried out at the official 1st and 2nd opportunity, with 90% attendance required during the course. The fraudulent accomplishment of the tests or activities of evaluation, once verified, will imply directly the loss of the right to the opportunity in which the fault is committed and respect of the subject in which it had been committed. The student will be graded with a "fail" (numerical grade 0) in the corresponding call of the academic year, whether the offence is committed on the first or second opportunity. To this end, the grade will be modified in the first opportunity report, if necessary. 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





<b>Basic</b>	<p>BIBLIOGRAFÍA BÁSICA DA MATERIA: BUQUES TANQUES PETROLEIROS Manual de Carga y Seguridad para Buques Tanques IMO Guía Internacional para Petroleros y Terminales, IMO Lavado con crudo y Empleo del Gas Inerte. Moreno Isaac. Tanker Handbook for Deck. Officers. Batist, G. Supertankers, Anatomy; Operations. Solly Raymond. Practical Petroleum Tables for ship use. ASTM Código para la construcción y equipo de Buques Tanques Petroleros. Tanker Cargo Handling. R Terford. SOLAS IMO. MARPOL. IMO. Safety in Oil Tankers International Chamber of Shipping, Carthusian Court, 12 Carthusian Street, London, ICS/OCIMF/IAPH, International Safety Guide for Oil Tankers and Terminals Witherby and Co. Ltd., 32/36 Aylesbury Street, London 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 Seas Guide for Oil Tankers(Retention of oil residuos on board) (Witherby and Co. Ltd., London) (ISBN 0-948691-15-8) 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 Chinae 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. &gt;Manual del buque tanque. José Eloy García Tobío. Los buques tanque y su clasificación. Guillermo Ricardo Gadea.&gt; Gestión técnica de superpetrolero tipo. Nuria Vázquez Couso. Gas inerte, limpieza de tanques y desgasificación en buques petroleros</p>
<b>Complementary</b>	<p>- IMO (2018). Model Course 1.41. Passenger ship crowd management training. IMO - IMO (2018). Model Course 1.42. Passenger ship crisis management and human behaviour training. IMO Apuntes del profesor.Apuntes del profesor.</p>

#### Recommendations

##### Subjects that it is recommended to have taken before

Naval Hygiene and Risks at Work/631G01104

Chemistry/631G01107

##### Subjects that are recommended to be taken simultaneously

Thermodynamics and Engineering Thermodynamics/631G03014

##### Subjects that continue the syllabus

##### Other comments

To achieve these certificates:- Basic Training for Oil and Chemical Tanker Cargo Operations.&nbsp;- Basic Training for Liquefied Gas Tanker Cargo Operations.&nbsp;&nbsp;&nbsp;It is necessary to pass the two associated subjects&nbsp;&nbsp;&nbsp;

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