



| Teaching Guide      |   |        |   |         |
|---------------------|---|--------|---|---------|
| Identifying Data    |   |        | 2020/21                                     |         |
| 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            | SpanishGalician   |        |   |         |
| Teaching method     | Hybrid  |        |   |         |
| Prerequisites       |   |        |   |         |
| Department          | Ciencias da Navegación e Enxeñaría Mariña   |        |   |         |
| Coordinador         | Louro Rodríguez, Julio  | E-mail | julio.louro@udc.es                          |         |
| Lecturers           | Louro Rodríguez, Julio<br>Pacheco Martínez, Eliseo Antonio  | E-mail | julio.louro@udc.es<br>eliseo.pacheco@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 specialized) |        |   |         |



|                         |  |
|-------------------------|--|
| <b>Contingency plan</b> | <p>1. Modifications to the contents<br/>No changes are made</p> <p>2. Methodologies<br/>*Teaching methodologies that are maintained<br/>? Objective test<br/>? Laboratory practice<br/>? Guest lecture / keynote speech</p> <p>Teaching methodologies that are modified<br/>All methodologies would be taught through Teams/Moodle, synchronously and/or asynchronously.</p> <p>3. Mechanisms for personalized attention to students<br/>i. Email: Daily. Use for consultation, requesting virtual meetings to resolve questions and tracking guardianship work<br/>- Moodle: Daily. According to the needs of the students. They have "Thematic fóruns? 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.<br/>-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.</p> <p>4. Modifications in the evaluation<br/>The evaluation methodologies and the % in the weight of the qualification are maintained, including attendance, participation and use.<br/>*Evaluation observations:<br/>The same ones that appear in the Teaching Guide remain<br/>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:<br/>- Email: Daily. Use for consultation, requesting virtual meetings to resolve questions and tracking guardianship work<br/>- Moodle: Daily. According to the needs of the students. They have "Thematic fóruns? 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.<br/>-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.</p> <p>5. Modifications to the bibliography or webgraphy<br/>No changes are made</p> |
|-------------------------|--|

| Study programme competences / results |   |
|---------------------------------------|---|
| Code                                  | Study programme competences / results   |
| A1                                    | Controlar as boas prácticas de seguridade e saúde no traballo.                                    |
| A10                                   | Redactar e interpretar documentación técnica e publicacións náuticas.                             |
| A12                                   | Navegar, con seguridade e respecto ao medioambiente, en Buques Tanque.                            |
| A17                                   | Adoptar as medidas axeitadas en casos de emerxencias.   |
| A22                                   | Cargar, manipular e estibar do xeito axeitado as diferentes mercadorías transportables nun buque. |



|     |  |
|-----|--|
| A23 | Asegurar o cumprimento das prescricións sobre prevención da contaminación.   |
| A25 | Operar os sistemas de Prevención, control e loita conra incendios a bordo.   |
| A29 | Responder correctamente ás diferentes situacións de emerxencia.  |
| A33 | Protexer o medio mariño e aplicar criterios de sostibilidade ambiental ao transporte marítimo.   |
| A35 | Organizar e dirixir a tripulación.   |
| B1  | Aprender a aprender.   |
| B2  | Resolver problemas de xeito efectivo.  |
| B3  | Aplicar un pensamento crítico, lóxico e creativo.  |
| B4  | Comunicarse de xeito efectivo nun ámbito de traballo.  |
| B5  | Traballar de forma autónoma con iniciativa.  |
| B6  | Traballar de forma colaboradora.   |
| B7  | Comportarse con ética e responsabilidade social como cidadán e como profesional.   |
| B8  | Aprender en ámbitos de teleformación.  |
| B11 | Capacidade de adaptación a novas situacións.   |
| B12 | Uso das novas tecnoloxías TIC, e de Internet como medio de comunicación e como fonte de información.   |
| B13 | Comunicar por escrito e oralmente os coñecementos procedentes da linguaxe científica.  |
| B14 | Capacidade de análise e síntese.   |
| B15 | Capacidade para adquirir e aplicar coñecementos.   |
| B16 | Organizar, planificar e resolver problemas.  |
| B19 | 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.  |
| B20 | Desenvolverse para o exercicio dunha cidadanía aberta, culta, crítica, comprometida, democrática e solidaria, capaz de analizar a realidade, diagnosticar problemas, formular e implantar solucións baseadas no coñecemento e orientadas ao ben común. |
| B22 | Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.  |
| B23 | Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.   |
| B24 | Valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade.  |
| C6  | Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.  |
| C7  | Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.   |
| C13 | Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun modo que haberá de ser en grande medida autodirixido ou autónomo.   |

## Learning outcomes

| Learning outcomes | Study programme competences / results |
|-------------------|---------------------------------------|
|-------------------|---------------------------------------|



|  |     |     |     |
|--|-----|-----|-----|
| Sailing, with safety and respect to the environment protection, in tanker ships  | A1  | B1  | C6  |
|  | A10 | B2  | C7  |
|  | A12 | B3  | C13 |
|  | A17 | B4  |     |
|  | A22 | B5  |     |
|  | A23 | B6  |     |
|  | A25 | B7  |     |
|  | A29 | B8  |     |
|  | A33 | B11 |     |
|  | A35 | B12 |     |
|  |     | B13 |     |
|  |     | B14 |     |
|  |     | B15 |     |
|  |     | B16 |     |
|  |     | B19 |     |
|  | B20 |     |     |
|  | B22 |     |     |
|  | B23 |     |     |
|  | B24 |     |     |
| 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; A-V/1-1-2; A-V/1-1-3; A-V/1-2-2. |     |     |     |

| Contents |           |
|----------|-----------|
| Topic    | Sub-topic |



|  |  |
|--|--|
| <p>Basic Training for Oil and Chemical Tanker Cargo Operations.<br/>Table A-V/1-1-1, STCW.<br/>IMO Model Course 1.01.</p> <p>Basic Training for Liquefied Gas Tanker Cargo Operations.<br/>Table A-V/1-2-1, STCW.<br/>IMO Model course 1.04.</p> <p>Specialized Training for Oil Tankers.<br/>Table A-V/1-1-2, STCW.<br/>IMO Model course 1.02.</p> <p>Specialized Training for Liquefied Gas Tankers.<br/>Table A-V/1-2-2, STCW.<br/>IMO Model course 1.05</p> <p>Specialized Training for Chemical Tankers.<br/>Table A-V/1-1-3 STCW.<br/>IMO Model course 1.03.</p> | <p>FOR OIL, GAS AND CHEMICAL PRODUCTS:</p> <ol style="list-style-type: none"><li>1.- Regulations and Codes of practices</li><li>2.- Tankers ships equipment and Project</li><li>3.- Cargo properties.</li><li>4.- Ship?s operations</li><li>5.- Risks prevention.</li><li>6.- Occupational Safety and Health</li><li>7.- Closed spaces</li><li>8.- Measures Equipments</li><li>9.-a Emergency operations</li><li>10.- Fire prevention and fire fighting</li><li>11.- Pollution prevention.</li></ol> |
|--|--|



O desenvolvemento destes subtemas(1) cumpre coa columna 2, Coñecementos, Comprensión e Suficiencia, do Convenio STCW, modificado por Manila 2010, dos seguintes Cadros:

Cadro A-V/1-1-1. Especificación das normas mínimas de competencia en formación básica para operacións de carga en petroleiros e quimiqueros.

Cadro A-V/1-2-1. Especificación das normas mínimas de competencia en formación básica para as operacións de carga en buques tanque para o transporte de gas licuado.

Cadro A-V/1-1-2. Especificación das normas mínimas de competencia en formación avanzada para operacións de carga en petroleiros.

Cadro A-V/1-1-3. Especificación das normas mínimas de competencia en formación avanzada para operacións de carga en quimiqueros

Cadro A-V/1-2-2. Especificación das normas mínimas de competencia en formación avanzada para operacións de carga en buques tanque para o transporte de gas licuado.

(1): A obtención das competencias establecidas na Columna 1 dos respectivos Cadros STCW, complétanse coa superación dos contidos relacionados nas materias complementarias a esta:

? Hixiene Naval e Riscos Laborais.

? Química

? Seguridade Marítima

? Sistemas enerxéticos e auxiliares do buque



|   |   |
|---|---|
|   | <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/1-1-2. Specification of minimum standard of competence in advanced training for oil tanker cargo operations</p> <p>Table A-V/1-1-3. Specification of minimum standard of competence in advanced training for 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/1-2-2. Specification of minimum standard of competence in advanced training for liquefied gas tanker cargo operations</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>? Higiene Naval y Riesgos Laborales.</p> <p>? Química</p> <p>? Seguridad Marítima</p> <p>? Termodinámica y Termotecnia</p> |
| <p>O desenvolvemento e superación destes contidos, xunto cos correspondentes a outras materias que inclúan a adquisición de competencias específicas da titulación, garanten o coñecemento, comprensión e suficiencia das competencias recollidas no cadro AII/2, do Convenio STCW, relacionadas co nivel de xestión de Primeiro Oficial de Ponte da Mariña Mercante, sen limitación de arqueado bruto e Capitán da Mariña Mercante ata o máximo de 3.000 GT.</p>           | <p>Cadro A-II/2 del Convenio STCW.</p> <p>Especificación de las normas mínimas de competencia aplicables a Capitáns y primeiros oficiais de ponte de buques de arqueado bruto igual ou superior a 500 GT.</p>   |
| <p>The development and overcoming of these contents, together with those corresponding to other subjects that include the acquisition of specific competencies of the degree, guarantees the knowledge, comprehension and sufficiency of the competencies contained in Table AII / 2, of the STCW Convention, related to the level of management of chief mates of the Merchant Navy, on ships without gross tonnage limitation and Master up to a maximum of 3.000 GT.</p> | <p>Table A-II / 2 of the STCW Convention.</p> <p>Mandatory minimum requirements for certification of masters and chief mates on chief on ships of 500 gross tonnage or more.</p>  |

Planning

| Methodologies / tests | Competencies / Results | Teaching hours (in-person & virtual) | Student?s personal work hours | Total hours |
|-----------------------|------------------------|--------------------------------------|-------------------------------|-------------|
|-----------------------|------------------------|--------------------------------------|-------------------------------|-------------|



|                                |   |    |    |    |
|--------------------------------|---|----|----|----|
| Laboratory practice            | A1 A10 A12 A25 B1<br>B6 B8 B12 B16 B19  | 8  | 7  | 15 |
| Objective test                 | A10 B1 B2 B3 B4 B13<br>B14 B15 B16 B22 C6   | 9  | 54 | 63 |
| Guest lecture / keynote speech | A1 A10 A12 A17 A22<br>A23 A25 A29 A33<br>A35 B1 B3 B4 B5 B6<br>B7 B8 B11 B12 B13<br>B15 B16 B19 B20<br>B22 B23 B24 C6 C7<br>C13 | 35 | 35 | 70 |
| 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  |
|--------------------------------|--|
| 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.   |
| Objective test                 | They will realise partial exams of each one of the four subjects and a final exam of all the matter. So much the ordinary examinations like the extraordinary will regulate by the same format. B2, B3, B5, B7, B13, B14, B15, B16, C1 and C2. In this context will apply the specific competences of the degree purchased from practices of laboratory and guest lecture / keynote speech sessions. |
| 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.  |

**Personalized attention**

| Methodologies   | Description  |
|---|--|
| Laboratory practice<br>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. |

**Assessment**

| Methodologies                  | Competencies / Results  | Description  | Qualification |
|--------------------------------|---|--|---------------|
| Objective test                 | A10 B1 B2 B3 B4 B13<br>B14 B15 B16 B22 C6   | It will value with a maximum of 90% the written exams          | 90            |
| Laboratory practice            | A1 A10 A12 A25 B1<br>B6 B8 B12 B16 B19  | STCW-related practices are mandatory in their entirety.        | 0             |
| Guest lecture / keynote speech | A1 A10 A12 A17 A22<br>A23 A25 A29 A33<br>A35 B1 B3 B4 B5 B6<br>B7 B8 B11 B12 B13<br>B15 B16 B19 B20<br>B22 B23 B24 C6 C7<br>C13 | It will value the assistance to guest lectura / Keynote speech | 10            |
| 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

Table A-V/1-1-3. Specification of minimum standard of competence in advanced training for chemical tanker cargo operations

Table A-V/1-2-1. Specification of minimum standard of competence in basic training for liquefied gas tanker cargo operations

Table A-V/1-2-2. Specification of minimum standard of competence in advanced training for liquefied gas 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 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.

### Sources of information

|                             |  |
|-----------------------------|--|
| <p><b>Basic</b></p>         | <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 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. &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> |
| <p><b>Complementary</b></p> | <p>- ( ) . .<br/>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

Maritime Safety /631G01211

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

Ship's Energy and auxiliary systems/631G01204

**Subjects that continue the syllabus**

**Other comments**

To achieve these certificates:

- Basic Training for Oil and Chemical Tanker Cargo Operations.
- Basic Training for Liquefied Gas Tanker Cargo Operations.
- Specialized Training for Oil Tankers.
- Specialized Training for Liquefied Gas Tankers.
- Specialized Training for Chemical Tankers.

It is necessary to pass these subjects.

In addition, and due to Amendments of Manila, from course 2015-2016, the student will have to testify the fulfillment of 7,5 hours in simulator in each one of the parts: Specialized Training for oil, gas and chemical tankers.

**(\*)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.**