



Teaching Guide

| Identifying Data | | | | | 2024/25 |
|--------------------------|--|--------|--------------------|---------|---------|
| Subject (*) | Maintenance of the Hull | Code | 631510215 | | |
| Study programme | Mestrado Universitario en Náutica e Transporte Marítimo | | | | |
| Descriptors | | | | | |
| Cycle | Period | Year | Type | Credits | |
| Official Master's Degree | 2nd four-month period | First | Optional | 3 | |
| Language | Spanish | | | | |
| Teaching method | Face-to-face | | | | |
| Prerequisites | | | | | |
| Department | Ciencias da Navegación e Enxeñaría Mariña | | | | |
| Coordinador | Lama Carballo, Francisco Javier | E-mail | javier.lama@udc.es | | |
| Lecturers | Lama Carballo, Francisco Javier | E-mail | javier.lama@udc.es | | |
| Web | | | | | |
| General description | The main objective of this subject is to provide theoretical knowledge for the maintenance of the structure of the ship using coating systems. | | | | |

Study programme competences / results

| Code | Study programme competences / results |
|------|---|
| A21 | Capacidade para identificar danos e defectos, elaborar informes e implantar medidas correctivas. |
| B2 | Capacidade para resolver problemas de forma efectiva. |
| B12 | CB6 -Posuír e comprender coñecementos que aporten unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, a miúdo nun contexto de investigación |
| C2 | Capacidade para dominar a expresión e a comprensión de forma oral e escrita nun idioma estranxeiro |
| C5 | Capacidade para entender a importancia da cultura emprendedora e coñecer os medios ao alcance das persoas emprendedoras |
| C6 | Capacidade para valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse. |

Learning outcomes

| Learning outcomes | Study programme competences / results | | |
|--|---------------------------------------|-------------|-------------------|
| Identify damage to the ship's structure and make reports. | AJ21 | BC2 BC12 | CC2 CC5 CC6 |
| Identify damage to the protective coatings of the ballast tanks, cargo spaces and the structure of the ship, carry out its maintenance and repair. | AJ21 | BC2 BC12 | CC2 CC5 CC6 |

Contents

| Topic | Sub-topic |
|-----------------|---|
| 1. Regulations. | Ship structure. Importance. Damage to the structure. A.1120 (30). Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2017 A.1049 (27) 2011 ESP Code. MSC.371 (93). Amendments to 2011 ESP Code. MSC / Circ.1117. Guidance for Checking the Structure of Bulk Carriers. Other regulations related to maintenance. |



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|-------------------------|---|
| 2. Corrosion. | <p>Definition.</p> <p>Types of corrosion.</p> <p>ISO 4628/3. Corrosion assessment.</p> <p>Corrosion prevention systems.</p> |
| 3. Paints. | <p>Paints: classification by components and by uses.</p> <p>MSC.1 / Circ.1330. Guidelines for maintenance and repair of protective coatings</p> <p>MSC.1 / Circ.1399. Guidelines on Procedures for In-Service Maintenance and Repair of Coating Systems for Cargo Oil Tanks of Crude Oil Tankers</p> <p>MEPC.208 (62). 2011 Guidelines for Inspection of Anti-Fouling Systems on Ships</p> <p>A.798 (19). Guidelines for the selection, application and maintenance of corrosion prevention systems of dedicated seawater ballast tanks.</p> <p>Other guides and circulars.</p> |
| 4. Surface preparation. | <p>Surface preparation.</p> <p>ISO 8501-1</p> <p>Equipment for surface preparation.</p> |
| 5. Coating Application. | <p>Technical File.</p> <p>Coating scheme.</p> <p>Coating application systems.</p> <p>Coating Inspection: ISO 4628/2, ISO 4628/4, ISO 4628/5</p> |
| 6. Other Maintenance. | <p>MSC / Circ.1071. Guidelines for Bulk Carrier Hatch Cover Surveys and Owner's Inspections and Maintenance.</p> <p>MSC.1 / Circ.1331. Guidelines for Construction, Installation, Maintenance and Inspection / Survey of Means of Embarkation and Disembarkation.</p> <p>MSC.1-Circ.1279. Guidelines for corrosion protection of permanent means of access arrangements</p> <p>ILO Convention number 152. Lifting equipment. Arts. 22.2, 23.1, 24.1, 25.1</p> <p>Piping</p> |
| 7. Health & Safety. | <p>Occupational Risks Prevention related to Structure Maintenance.</p> |
| 8. Reports. | <p>IACS. Surveyor's Glossary Hull Terms & Hull Survey Terms</p> <p>ISO 4618. Paints and Varnishes. Terms and definitions</p> <p>A.741 (18). ISM code</p> <p>MSC.286 (86). Ship Condition Assessment Plan (CAS).</p> |

| Planning | | | | |
|--------------------------------|----------------------------|--------------------------------------|-------------------------------|-------------|
| Methodologies / tests | Competencies / Results | Teaching hours (in-person & virtual) | Student's personal work hours | Total hours |
| Guest lecture / keynote speech | A13 A21 B2 B12 C2 C5 C6 | 21 | 21 | 42 |
| Objective test | A21 A13 B12 B2 C2 C5 C6 | 3 | 0 | 3 |
| Supervised projects | A13 A21 B12 B2 C2 C5 C6 | 0 | 28 | 28 |
| 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 | Presentación oral dos temas que compoñen a materia, buscando tamén a participación activa de todos os alumnos. Os contidos pódense desenvolver en inglés. |



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|---------------------|--|
| Objective test | Exame final escrito sobre os conceptos da asignatura. No caso de pedir demostrar o coñecemento na aplicación de certa normativa, se poderá permitir a consulta da mesma no exame. |
| Supervised projects | Resumos normativos. Casos sobre organización de inspeccións a bordo. Casos sobre preparación de superficies e esquemas de pintado. |

Personalized attention

| Methodologies | Description |
|--|---|
| Supervised projects Guest lecture / keynote speech | Teacher's office phone: Extension 4226 E-mail: The teacher will try to answer all emails as soon as possible. Teams The synchronous tutoring schedule must be previously coordinated with the teacher. |

Assessment

| Methodologies | Competencies / Results | Description | Qualification |
|---------------------|----------------------------|--|---------------|
| Supervised projects | A13 A21 B12 B2 C2 C5 C6 | Normative summaries. Cases on organization of inspections on board. Cases on surface preparation and painting schemes. | 20 |
| Objective test | A21 A13 B12 B2 C2 C5 C6 | Final written exam on the concepts of the subject. In the case of asking to demonstrate knowledge in the application of certain regulations, it may be allowed to consult it in the exam. | 80 |

Assessment comments

The evaluation criteria set out in Table A-III / 2 of the STCW Code, and set out in the Quality Assurance System, will be taken into account when designing and carrying out the evaluation.

Sources of information

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| Basic | <ul style="list-style-type: none"> - IACS. (). Rec 87 Guidelines for Coating Maintenance & Repairs for Ballast tanks and Combined Cargo-Ballast tanks on Oil Tankers. . - FROSIO. (2017). Certification Book for Surface Treatment. www.frosiobook.no - CARIDIS, P. (2009). Inspection, Repair and Maintenance of Ship Structures. 2nd ed.. Witherbys. Livingston. - VERVLOESEN, W. (2003). Hatch Cover Inspections. . The Nautical Institute. London. - IMO. (2004). Model course 3.07 plus compendium. Hull and Structural Surveys. . - IMO. (1994). Model Course 2.01. Maintenance Planning and Maintenance Execution. . |
| Complementary | |

Recommendations

Subjects that it is recommended to have taken before

Subjects that are recommended to be taken simultaneously

Nautical Inspections Management /631510209

Subjects that continue the syllabus



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| Other comments |
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(*)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.