Course guide  
280618 - 280618 - Stowage

Unit in charge: Barcelona School of Nautical Studies  
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering.  
Degree: BACHELOR’S DEGREE IN NAUTICAL SCIENCE AND MARITIME TRANSPORT (Syllabus 2010). (Compulsory subject).  
Academic year: 2023  ECTS Credits: 12.0  Languages: Catalan, Spanish

LECTURER  
Coordinating lecturer: FRANCISCO JAVIER MARTINEZ DE OSÉS  
Others: Segon quadrimestre: CRISTINA CAMPOS TORESANO - GNTM  FRANCISCO JAVIER MARTINEZ DE OSÉS - GNTM

PRIOR SKILLS  
Elementary knowledge of ship's theory: ships' nomenclature, drafts, trim, stability, cutting stresses, bending moments.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:  
3. Knowledge of the organization and management capacity for repair projects, installation, modification and maintenance of loading equipment, storage and security systems and means of loading and auxiliary vessel.  
4. Knowledge of maintenance equipment load measurement and control systems of the atmospheres of cargo space and equipment of tankers for transportation of liquefied petroleum natural gas oil, transportation of crude oil derivatives and chemicals.

Transversal:  
1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

TEACHING METHODOLOGY

- Understanding, knowledgement and sintetizing of all the concepts  
- Propose and resolve problems  
- Propose and resolve loading and unloading plans, including stowage  
- Perform individual and group works  
- Develop reasoning and critical spirit and defend it orally and / or in writing.
LEARNING OBJECTIVES OF THE SUBJECT

The students at the end the subject will demonstrate:
- Know and be expert on the stowage and cargo lashing, systems.
- Is able to assess the loading and discharging, devices.
- Is able to carry out studies of stowage and lashing.
- Is able to design and calculate the cargo protection devices.
- Is able to organize and manage repairing projects, installation, modifying and maintenance of cargo, stowage and safety systems, cargo and auxiliary devices.

Competencies
The specific competencies included in CE 25, 26 and 27 together with the ones of chart A-II/1 of the STCW convention: "Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes" and part of the chart A-II/2: "Plan and ensure safe loading, stowage, securing care, during the voyage and unloading cargoes".

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group</td>
<td>40,0</td>
<td>13.33</td>
</tr>
<tr>
<td>Guided activities</td>
<td>38,0</td>
<td>12.67</td>
</tr>
<tr>
<td>Hours small group</td>
<td>2,0</td>
<td>0.67</td>
</tr>
<tr>
<td>Hours large group</td>
<td>40,0</td>
<td>13.33</td>
</tr>
<tr>
<td>Self study</td>
<td>180,0</td>
<td>60.00</td>
</tr>
</tbody>
</table>

Total learning time: 300 h

CONTENTS

(ENG) Estiba, introducción y evolución histórica.

Description:
Elements used for loading, unloading, and lashing. Cables, Cable calculations.

Full-or-part-time: 26h
Theory classes: 4h
Practical classes: 4h
Self study : 18h

(ENG) RO- RO Cargo

Description:
Stowage, transport, calculations and stowage plans

Full-or-part-time: 26h
Theory classes: 4h
Practical classes: 4h
Self study : 18h
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Full-or-part-time</th>
<th>Theory classes</th>
<th>Practical classes</th>
<th>Self study</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ENG) Containers.</td>
<td>Stowage, DG cargo segregation, transport, calculations and stowage plans</td>
<td>59h</td>
<td>8h</td>
<td>10h</td>
<td>41h</td>
</tr>
<tr>
<td>(ENG) Cereals.</td>
<td>Stowage, transport, calculations and loading/unloading plans</td>
<td>26h</td>
<td>4h</td>
<td>4h</td>
<td>18h</td>
</tr>
<tr>
<td>(ENG) Coal, minerals and concentrates</td>
<td>Stowage, transport, calculations and loading/loading plans</td>
<td>26h</td>
<td>4h</td>
<td>4h</td>
<td>18h</td>
</tr>
<tr>
<td>(ENG) Heavy loads.</td>
<td>Vessel types, loading and unloading systems, stowage, transport</td>
<td>13h</td>
<td>2h</td>
<td>2h</td>
<td>9h</td>
</tr>
<tr>
<td>(ENG) Liquid and gas bulk cargo.</td>
<td>Vessel types, loading and unloading systems, calculations, loading/unloading plans</td>
<td>41h</td>
<td>6h</td>
<td>6h</td>
<td>27h</td>
</tr>
</tbody>
</table>
**Operation in other type of vessels.**

**Description:**
Reefer ships  
Woodships carriers  
Cement carriers  
OBO, OSV, etc.

**Specific objectives:**
To provide the basic particulars and preliminary elements of working; of other types of ships not seen in other chapters.

**Related activities:**
Practical loading activities of the described ships' types.

**Full-or-part-time:** 34h  
Theory classes: 24h  
Guided activities: 10h

**GRADING SYSTEM**

The final mark is the sum of the partial marks as follows:  
\[ N_{\text{final}} = 0,4 \times N_{\text{pp1}} + 0,4 \times N_{\text{pp2}} + 0,2 \times N_{\text{ec}} \]  

Only students having delivered all the course activities, will be afforded to do the final exam.

- \(N_{\text{final}}\): Final mark  
- \(N_{\text{pp1}}\): First partial exam mark  
- \(N_{\text{pp2}}\): Second partial exam mark  
- \(N_{\text{ec}}\): Continuous evaluation

**EXAMINATION RULES.**

All activities and/or continuous evaluation acts, not made or late delivery, will not be evaluated.  
It is not afforded any kind of documents during the evaluation activities. Professors will provide tables and or information needed for the developing of the exercises.  
Copy or talk, during during an exam, will mean the retirement of the exam.

**BIBLIOGRAPHY**

**Basic:**

**Complementary:**
- International Association of Classification Societies. Bulk carriers : guidance and information on bulk cargo loading and discharging to reduce the likelihood of over-stressing the hull structure. London: IACS, 1997.