280628 - Transport of Dangerous, Hazardous and Harmful Goods

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering
Academic year: 2019
Degree: BACHELOR'S DEGREE IN NAUTICAL SCIENCE AND MARITIME TRANSPORT (Syllabus 2010). (Teaching unit Compulsory)
ECTS credits: 4,5
Teaching languages: Spanish

Teaching staff
Coordinator: JOSE MANUEL VALLELLANO GARCÍA
Others: Primer quadrimestre: JOSE MANUEL VALLELLANO GARCÍA - GNTM

Prior skills
Having Passed the course of "STOWAGE" Q4 GNTM

Degree competences to which the subject contributes

Specific:
1. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.
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:

Learning objectives of the subject
The student should know how to operate the loading and discharging systems of the special cargoes ships.

Competencies
The specifics CE.24, 25, 26 i 27 and additionally the ones of chart A-II/1 in the STCW convention: "Monitor de loading, stowage, securing, care during the voyage and the unloading of cargoes" partially and the chart A-II/2 of the STCW
280628 - Transport of Dangerous, Hazardous and Harmful Goods

convention: "Carriage of dangerous goods" partially.

<table>
<thead>
<tr>
<th>Study load</th>
<th>Total learning time: 112h 30m</th>
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<tbody>
<tr>
<td>Hours large group:</td>
<td>15h</td>
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<tr>
<td>Hours medium group:</td>
<td>15h</td>
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<tr>
<td>Hours small group:</td>
<td>6h</td>
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<tr>
<td>Guided activities:</td>
<td>9h</td>
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<tr>
<td>Self study:</td>
<td>67h 30m</td>
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</tbody>
</table>
### Content

<table>
<thead>
<tr>
<th>Chapter 1: Basic training for oil and chemical tanker cargo operations</th>
<th>Learning time: 22h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Provide training to students to be duly qualified under section A-V/1-1 of the STCW Code with specific duties and responsibilities related to cargo or cargo equipment on oil or chemical tankers.</td>
<td>Theory classes: 9h 30m</td>
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<tr>
<td></td>
<td>Practical classes: 3h</td>
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<tr>
<td></td>
<td>Self study : 9h 30m</td>
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<tr>
<td>Related activities: Resolution of a real maritime accident</td>
<td><strong>Specific objectives:</strong></td>
</tr>
<tr>
<td></td>
<td>* Familiarization with the equipment, instrumentation and controls used for cargo handling on a tanker</td>
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<tr>
<td></td>
<td>* Greater awareness of the need of proper planning, the use of checklists and the time scales involved in the various cargo handling Operations</td>
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<tr>
<td></td>
<td>* Enhanced awareness to apply proper and safe procedures at all times when carrying out the various Operations on board or oil or chemical tanker</td>
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<td></td>
<td>* Acquisition of experience in identifying operational problems and assist in solving them</td>
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<tr>
<td></td>
<td>* Improved awareness to apply proper and safe procedures at all times when carrying out the various Operations on board an oil tanker</td>
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<td></td>
<td>* Improved ability to promote safety and protect the marine environment</td>
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<tr>
<td></td>
<td>* Increased ability to assist and coordinate actions during emergencies</td>
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<table>
<thead>
<tr>
<th>Chapter 2: Advanced training for oil tanker cargo operations</th>
<th>Learning time: 27h 15m</th>
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</thead>
<tbody>
<tr>
<td>Description: Provide training to students to meet the requirements of section A-V/1-1 para. 2 of the STCW Code with specific duties for loading, unloading and care in transit or handling of oil cargoes.</td>
<td>Theory classes: 12h 08m</td>
</tr>
<tr>
<td>Related activities: Maritime accident resolution</td>
<td>Practical classes: 3h</td>
</tr>
<tr>
<td>Specific objectives:</td>
<td>Self study : 12h 07m</td>
</tr>
<tr>
<td></td>
<td>* Familiarization with the equipment, instrumentation and controls used for cargo handling on an oil tanker</td>
</tr>
<tr>
<td></td>
<td>* A greater awareness of the need of proper planning, the use of checklists and the time scales involved in the various cargo handling Operations.</td>
</tr>
<tr>
<td></td>
<td>* An enhanced awareness to apply proper and safe procedures at all times when carrying out the various Operations on board an oil tanker</td>
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<td>* An acquisition of experience in identifying operational problems and assist in solving them</td>
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<td></td>
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# 280628 - Transport of Dangerous, Hazardous and Harmful Goods

## Chapter 3: Advanced training for chemical tanker cargo operations

### Learning time: 31h
- Theory classes: 14h
- Practical classes: 3h
- Self study: 14h

### Description:
Provide training to students to be duly qualified, in accordance with section A-V/1-1, para. 3 of the STCW Code, with specific duties for loading, unloading and care in transit of chemical tanker cargoes.

### Related activities:
- Maritime accident resolution

### Specific objectives:
- Familiarization with the equipment, instrumentation and controls used for cargo handling on an oil tanker
- A greater awareness of the need of proper planning, the use of checklists and the time scales involved in the various cargo handling Operations.
- An enhanced awareness to apply proper and safe procedures at all times when carrying out the various Operations on board an oil tanker
- An acquisition of experience in identifying operational problems and assist in solving them
- An improvement in the ability to promote safety and protect the marine environment
- An increased ability to assist and coordinate actions during emergencies

## Chapter 4: Basic training for liquefied gas tanker cargo operations

### Learning time: 18h 30m
- Theory classes: 7h 45m
- Practical classes: 3h
- Self study: 7h 45m

### Description:
Provide training to candidates to be duly qualified under section A-V/1-2 of the STCW Code with specific duties and responsibilities related to cargo or cargo equipment on liquefied gas tankers.

### Related activities:
- Maritime accident resolution

### Specific objectives:
- Familiarization with the equipment, instrumentation and controls used for cargo handling on a liquefied gas tanker
- A greater awareness of the need of proper planning, the use of checklists and the time scales involved in the various cargo handling Operations.
- An enhanced awareness to apply proper and safe procedures at all times when carrying out the various Operations on board liquefied gas tanker
- An acquisition of experience in identifying operational problems and assist in solving them
- An improvement in the ability to promote safety and protect the marine environment
- An increased ability to assist and coordinate actions during emergencies
Chapter 5: Advanced training for liquefied gas tanker cargo operations

**Learning time:** 32h 45m
- Theory classes: 14h 52m
- Practical classes: 3h
- Self study: 14h 53m

**Description:**
Provide training to candidates to be duly qualified under section A-V/1-2 of the STCW Code with specific duties and responsibilities related to cargo or cargo equipment on liquefied gas tankers.

**Specific objectives:**
Course involves:
1. Knowledge of liquefied gas tanker design, systems, and equipment
2. Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation
3. Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity
4. Proficiency in tanker safety culture and implementation of safety management requirements
5. Proficiency to apply safe preparations, procedures and checklists for all cargo operations
6. Proficiency to perform cargo measurements and calculations
7. Proficiency to manage and supervise personnel with cargo-related responsibilities
8. Knowledge and understanding of basic chemistry and physics and the relevant definitions related to the safe carriage of liquefied gases in bulk in ships
9. Understanding the information contained in a Material Safety Data Sheet (MSDS)
10. Knowledge and understanding of the hazards and control measures associated with liquefied gas tanker cargo operations
11. Proficiency to calibrate and use monitoring and gas detection systems, instruments and equipment
12. Knowledge and understanding of dangers on non-compliance with relevant rules/regulations
13. Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to liquefied gas tankers
14. Knowledge and understanding of liquefied gas tanker emergency procedures
15. Actions to be taken following collision, grounding or spillage and envelopment of the ship in toxic or flammable vapour
17. Understanding of procedures to prevent pollution of the environment
18. Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations as commonly applied
19. Proficiency in the use of the IBC and IGC Codes and related documents
280628 - Transport of Dangerous, Hazardous and Harmful Goods

Bibliography

Basic:


