280815 - Maintenance, Management and Life Cycle Optimization

**Coordinating unit:** 280 - FNB - Barcelona School of Nautical Studies

**Teaching unit:** 742 - CEN - Department of Nautical Sciences and Engineering

**Academic year:** 2018

**Degree:** MASTER'S DEGREE IN NAVAL AND OCEAN ENGINEERING (Syllabus 2017). (Teaching unit Compulsory)

**ECTS credits:** 5  
**Teaching languages:** Catalan, Spanish

### Teaching staff

**Coordinator:** RAMON GRAU MUR

### Opening hours

**Timetable:** The opening hours will be communicated at the beginning of each period

### Teaching methodology

Receive, understand and synthesize knowledge.
Document practical cases.
Develop reasoning and critical thinking and defend it orally or in writing.
Perform an individual work.
Application of knowledge through the engine room simulator.

### Learning objectives of the subject

Competences STCW Manila A-III/2

1. Manage fuel, lubrication and ballast operations
1.1. Operation and maintenance of machinery, including pumps and piping systems
2. Manage safe and effective maintenance and repair procedures
2.1. Marine engineering Practice
2.2. Manage safe and effective maintenance and repair procedures
2.3. Planning maintenance, including statutory and class verifications
2.4. Planning repairs
3. Detect and identify the cause of machinery malfunctions and correct faults
3.1. Detection of machinery malfunction, location of faults and action to prevent damage
3.2. Inspection and adjustment of equipment
3.3. Nondestructive examination

### Study load

<table>
<thead>
<tr>
<th>Total learning time: 45h</th>
<th>Hours large group: 45h</th>
<th>100.00%</th>
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</table>
## Content

<table>
<thead>
<tr>
<th>Management and exploitation of maritime industries</th>
<th>Learning time: 3h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 3h</td>
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</table>

**Description:**
Management and exploitation of maritime industries. Maintenance management

**Specific objectives:**
STCW KUPs: 2.2

<table>
<thead>
<tr>
<th>Systems engineer</th>
<th>Learning time: 18h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 18h</td>
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**Description:**
Operational and logistic requirements, sustainability, process of obtaining a system, management plans, production and strategies. Application of engineering to a vessel and / or device. Analysis techniques
Organisation of works

**Specific objectives:**
STCW KUPs: 1.1, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3

<table>
<thead>
<tr>
<th>Systems logistics</th>
<th>Learning time: 16h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 16h</td>
</tr>
</tbody>
</table>

**Description:**
Life cycle, configuration, life time analysis, reliability, maintenance, logistic support analysis. Maintenance contracts. Application of logistics to a vessel and / or device

**Specific objectives:**
STCW KUPs: 3.2, 3.3

<table>
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<tr>
<th>Costs</th>
<th>Learning time: 8h</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 8h</td>
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</table>

**Description:**
Concepts of price, investment, expense and cost. Application to the project and construction of ship and artifact. Costs of a ship throughout its life. Profitability and business profit

**Specific objectives:**
STCW KUPs: 2.2
The final grade is the sum of the following partial grades:

\[ N_{\text{final}} = 0.5 \cdot N_{\text{af}} + 0.5 \cdot \text{Mother} \]

- \( N_{\text{final}} \): final grade of the subject
- \( \text{Mother} \): qualification of the interim evaluation
- \( N_{\text{af}} \): qualification of the final evaluation

**Regulations for carrying out activities**

If one of the assessment activities is not carried out, it will be considered not rated.
It will be considered Not Presented when a minimum of 80% of the assessment activities is not carried out.

**Bibliography**

**Basic:**