280696 - Inspection, Maintenance and Repair of Ship Structures

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 NAVAL SYSTEMS AND TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Optional)
BACHELOR'S DEGREE IN MARINE TECHNOLOGIES (Syllabus 2010). (Teaching unit Optional)
BACHELOR'S DEGREE IN MARINE TECHNOLOGIES/BACHELOR'S DEGREE IN NAVAL SYSTEMS AND TECHNOLOGY ENGINEERING (Syllabus 2016). (Teaching unit Optional)
ECTS credits: 6
Teaching languages: Catalan, Spanish, English

Teaching staff
Coordinator: JOEL JURADO GRANADOS
Others: Segon quadrimestre:
JOEL JURADO GRANADOS - 1

Opening hours
Timetable: Monday 13:00-15:00, 19:00-20:00

Teaching methodology
The contents of the course are given by master class. The teacher will interact with the students in class, in order to assimilate the knowledge acquired. This interaction will consist on questions related with the course. The interaction in class will give to the student a guideline to study. Besides, several activities are planned to realized out of class time. These activities can be done individually or in group. The activities will consist on solve practical cases of the content seen on the course, encouraging the autonomous learning for the student.
Finally, the students will have the chance to visit Marina Barcelona 92 shipyard, where they can watch in situ the knowledge acquired during the course.

Learning objectives of the subject
Understanding the processes of construction and repair of ships, structural concepts, types of inspections and certificates of ships, classification societies, ship recognition methods and main breakdowns.

Study load

<table>
<thead>
<tr>
<th>Study load</th>
<th>Hours large group:</th>
<th>Hours medium group:</th>
<th>Hours small group:</th>
<th>Guided activities:</th>
<th>Self study:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total learning time: 150h</td>
<td>30h</td>
<td>15h</td>
<td>10h</td>
<td>5h</td>
<td>90h</td>
</tr>
<tr>
<td></td>
<td>20.00%</td>
<td>10.00%</td>
<td>6.67%</td>
<td>3.33%</td>
<td>60.00%</td>
</tr>
</tbody>
</table>
## Content

| Construction and repair of ships and boats. Structural concepts. | **Learning time:** 15h  
Theory classes: 15h |
|---|---|

**Description:**  
Shipbuilding: Process shipbuilding, steel and other construction materials, painting and finishing, and testing equipment.  
Ship Repair: Processes and practices of ship repair steel, planning, and execution of technical repair common types of repair work.  
Ship breaking up.

| Recognition and Certification of ships | **Learning time:** 15h  
Theory classes: 15h |
|---|---|

**Description:**  
**Specific objectives:**  
The procedures for inspection and certification of merchant vessels and pleasure and abroad.  
Knowing the certificates to be carried on board ships.

| Classification Societies | **Learning time:** 10h  
Theory classes: 10h |
|---|---|

**Description:**  
- Operation  
- Goals  
- Structure  
- IACS - International Association of Classification Societies  
- CSR - Common Structural Rules.

| Recognition methods of the ship | **Learning time:** 10h  
Theory classes: 10h |
|---|---|

**Description:**  
Means to assess the condition of the vessel: visual inspection, non-destructive testing methods, pressure testing and sealing testing, performance testing, stability, toma thickness, vibration measuring tools and equipment.  
Inspection programs: Recognition periodic renewal class distinctions in drydock.
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Planning of activities

<table>
<thead>
<tr>
<th>name english</th>
<th>Hours: 2h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>Theory classes: 2h</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Description:</th>
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<tbody>
<tr>
<td>Visiting to MB’92 shipyard.</td>
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</table>

Qualification system

30% - FINAL PROJECT.
30% - PARTIAL EXAM.
40% - FINAL EXAM.

The test will be held on reevaluation and time specified by the Faculty. Consist of only a single test Prodi presented the students who meet the requirements set out in the undergraduate academic regulations of the FNB.

Regulations for carrying out activities

Assessment tests will contain theoretical tests, practical and / or problem solving.

Considered absent does not involve any of the tests evaluated.

The test will be held on reassessment and time specified by the Faculty. Consist of only a single test Prodi presented the students who meet the requirements set out in the undergraduate academic regulations of the FNB.

Failures

Learning time: 10h

<table>
<thead>
<tr>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classes of failures, considerations to take into account. Fatigue, corrosion under tension, the progress of corrosion, humidity and heat stress concentration factor.</td>
</tr>
</tbody>
</table>
Bibliography

Basic:


Others resources: