280663 - Naval Technology and Mechanics

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering
Academic year: 2020
Degree: BACHELOR'S DEGREE IN NAVAL SYSTEMS AND TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MARINE TECHNOLOGIES/BACHELOR'S DEGREE IN NAVAL SYSTEMS AND TECHNOLOGY ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
ECTS credits: 9
Teaching languages: Catalan

Degree competences to which the subject contributes

Specific:
1. Process and mechanical engineering.
2. Process and assembly machines onboard equipment and systems.

Transversal:
1. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

Teaching methodology

Expositive classes, interventions, group work, written work, problem solving, information search, visits and practices. Incorporate the gender perspective.

Learning objectives of the subject

Know the processes of obtaining metals, metallurgy and steel.
Know the shaping of metals for foundry, forge, laminar and extrusion trains.
Know the processes of mechanical manufacturing, machine tools and parts mechanization.
Know the main techniques of joining metals by welding and its application.
Know the main measurement instruments used for the verification of parts.
Be able to work as a member of a team, either as a member, or performing management tasks with the aim of contributing to developing projects with pragmatism and feeling of responsibility, assuming commitments considering the available resources.

This course is included in the first UPC Gender and Teaching Project whose main aim is to incorporate the gender perspective in different degree courses.
### Study load

<table>
<thead>
<tr>
<th>Total learning time: 225h</th>
<th>Hours large group: 60h</th>
<th>26.67%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 20h</td>
<td>8.89%</td>
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<tr>
<td></td>
<td>Hours small group: 0h</td>
<td>0.00%</td>
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<tr>
<td></td>
<td>Guided activities: 10h</td>
<td>4.44%</td>
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<tr>
<td></td>
<td>Self study: 135h</td>
<td>60.00%</td>
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</table>
### Content

<table>
<thead>
<tr>
<th><strong>Metals in the naval industry.</strong></th>
<th><strong>Learning time:</strong> 14h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td></td>
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</table>
Practical classes: 2h |

<table>
<thead>
<tr>
<th><strong>Basic tools and manual mechanical processes.</strong></th>
<th><strong>Learning time:</strong> 6h</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
<td></td>
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<tr>
<td>Basic tools in a mechanical workshop. Flat and air layout. Roughness and abrasives. Aspects related to work safety in mechanical workshops.</td>
<td>Theory classes: 6h</td>
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<table>
<thead>
<tr>
<th><strong>Metrology</strong></th>
<th><strong>Learning time:</strong> 6h</th>
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</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td></td>
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Practical classes: 2h |

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<tr>
<th><strong>(ENG) Soldadura.</strong></th>
<th><strong>Learning time:</strong> 30h</th>
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<td><strong>Description:</strong></td>
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</table>
Practical classes: 10h |
Metal cutting processes: Tooling machines

<table>
<thead>
<tr>
<th>Learning time: 24h</th>
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<tbody>
<tr>
<td>Theory classes: 16h</td>
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<tr>
<td>Practical classes: 8h</td>
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**Description:**

Detachable joints: Threads, screws and nuts.

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<tr>
<th>Learning time: 10h</th>
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<tbody>
<tr>
<td>Theory classes: 8h</td>
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<tr>
<td>Practical classes: 2h</td>
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</table>

**Description:**

Qualification system

Attendance at practices is mandatory. The subject can not be passed without passing the practices. The minimum attendance to the practices must be superior to 80% of the programmed practices. The attendance to theoretical classes will be taken into account at the time of the final evaluation.

The final grade is the sum of the partial notes as follows:

\[ N_{final} = 0.4 \times NPF + 0.2 \times NPP + 0.2 \times NPR + 0.2 \times Nad \]

- **NPF:** Note-test final exam
- **NPP:** Note-test partial exam
- **NPR:** Practical Note
- **Nad:** Note supervised activities

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

Regulations for carrying out activities

The evaluation tests may contain theoretical tests, practical and / or troubleshooting.

It is considered not presented when none of the evaluable tests may be done.

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

Basic:


Complementary:


