Course guide
280663 - 280663 - Naval Technology and Mechanics

Unit in charge: Barcelona School of Nautical Studies
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering.
Degree: BACHELOR'S DEGREE IN NAVAL SYSTEMS AND TECHNOLOGY ENGINEERING (Syllabus 2010). (Compulsory subject).
Academic year: 2023  ECTS Credits: 9.0  Languages: Catalan, Spanish, English

LECTURER
Coordinating lecturer: JORGE TORRALBO GAVILAN
Others: Primer quadrimestre:
MANUEL RODRIGUEZ CASTILLO - DT, GESTN
JORGE TORRALBO GAVILAN - DT, GESTN

Segon quadrimestre:
MANUEL RODRIGUEZ CASTILLO - GSDT
JORGE TORRALBO GAVILAN - GSDT

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES
Specific:
2. Process and mechanical engineering.
3. 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>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group</td>
<td>20,0</td>
<td>8.89</td>
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<tr>
<td>Self study</td>
<td>135,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>60,0</td>
<td>26.67</td>
</tr>
<tr>
<td>Guided activities</td>
<td>10,0</td>
<td>4.44</td>
</tr>
</tbody>
</table>

Total learning time: 225 h

CONTENTS

### Metals in the naval industry.

**Description:**

**Full-or-part-time:** 14h
Theory classes: 12h
Practical classes: 2h

### Basic tools and manual mechanical processes.

**Description:**
Basic tools in a mechanical workshop. Flat and air layout. Roughness and abrasives. Aspects related to work safety in mechanical workshops.

**Full-or-part-time:** 6h
Theory classes: 6h

### Metrology

**Description:**

**Full-or-part-time:** 6h
Theory classes: 4h
Practical classes: 2h
**Soldadura.**

**Description:**

**Full-or-part-time:** 30h
Theory classes: 20h
Practical classes: 10h

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**Metal cutting processes: Tooling machines**

**Description:**

**Full-or-part-time:** 24h
Theory classes: 16h
Practical classes: 8h

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**Detachable joints: Threads, screws and nuts.**

**Description:**

**Full-or-part-time:** 10h
Theory classes: 8h
Practical classes: 2h

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**GRADING SYSTEM**

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

\[ N_{\text{final}} = 0.5 \times N_{\text{PF}} + 0.2 \times N_{\text{PP}} + 0.2 \times N_{\text{PR}} + 0.1 \times N_{\text{Ad}} \]

- **NPF:** Note-test final exam
- **PPN:** 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.

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**EXAMINATION RULES.**

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. It will be considered not presented (NP) when all the tests are not carried out. The evaluation tests may contain theoretical tests, practical and / or troubleshooting. It is considered not presented when none of the valuable 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 to only the students who meet the requirements set out in the undergraduate academic regulations of the FNB.
BIBLIOGRAPHY

Basic:

Complementary: