280674 - Naval System Design

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering
Academic year: 2018
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 staff

Coordinator: JULIO GARCIA ESPINOSA
Others: Segon quadrimestre:
- JULIO GARCIA ESPINOSA - 1
- JUAN CARLOS MURCIA GONZÁLEZ - 1
- JOSE MANUEL ROLEDANO ESTEBAN - 1

Degree competences to which the subject contributes

Generical:
1. ABILITY TO SHAPE, DESIGN AND IMPLEMENT COMPLEX SYSTEMS IN THE FIELD OF NAVAL ENGINEERING. Ability to conception, design and implementation of processes, systems and / or services in the field of naval technical engineering, including the drafting and development of projects in the field of specialization, knowledge of basic materials and technologies, decision making, managing the activities being projects within their specialty, conducting measurements, calculations and valuations, managing specifications, regulations and mandatory standards, assessment of the social and environmental impact of technical solutions adopted, economic, material and human resources involved in the project, with a systematic and comprehensive vision assessment.

Transversal:
2. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 2. Applying sustainability criteria and professional codes of conduct in the design and assessment of technological solutions.
3. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

Teaching methodology

The methodology of the course is based on the work on different workshops. First, the different theoretical concepts, regulations, and practical indications related to the system are reviewed. Then the students are organized in groups to work in a practical workshop on the system design. The classes are organized as coordination activities for the workshop. The different tasks to be carried out are reviewed and discussed.

Learning objectives of the subject

- To identify the requirements of every system
- To generate plans to conduct the different works, and manage the work in group
- To relate knowledge among different disciplines
- Understand the different regulations to be applied in the design of naval systems
- To perform calculations and practical design of different naval systems
### Study load

<table>
<thead>
<tr>
<th></th>
<th>Hours large group:</th>
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<th>Hours medium group:</th>
<th></th>
<th>Hours small group:</th>
<th></th>
<th>Guided activities:</th>
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<th>Self study:</th>
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<tbody>
<tr>
<td><strong>Total learning time:</strong></td>
<td></td>
<td>225h</td>
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<td>40h</td>
<td>17.78%</td>
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<td>10h</td>
<td>10h</td>
<td>4.44%</td>
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<td>17.78%</td>
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## Content

### Introduction

**Degree competences to which the content contributes:**

**Description:**

### Fuel oil system

**Degree competences to which the content contributes:**

**Description:**

### Bilge and firefighting system

**Degree competences to which the content contributes:**

**Description:**

### Cooling water system

**Degree competences to which the content contributes:**

**Description:**

### Sanitary, black and grey water systems

**Degree competences to which the content contributes:**

**Description:**

### Hydraulic and pneumatic services

**Degree competences to which the content contributes:**
During the course, different practical exercises and workshops will be carried out. The average mark on those exercises (Nac) will weight a 60% of the final mark. The final exam will weight the rest 40%.

\[ N_{\text{final}} = 0.6 \times N_{\text{pf}} + 0.4 \times N_{\text{ac}} \]

The re-evaluation will consist on carrying out a practical exercise defined by the professors. This work will be focused on the aspects of the matter failed by the student. The student will be required to deliver a written report on the work at the day of the exam. Furthermore, the student could be asked for an oral presentation or written exam on the work.

Qualification system

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**System integration**

**Degree competences to which the content contributes:**

**Description:**

General discussion on integration and other aspects, including the review of elements related with the safety and accessibility, through hull and bulkhead fittings, vibration and noise control and materials incompatibility.

**Electric power system**

**Degree competences to which the content contributes:**

**Description:**


Qualification system

During the course, different practical exercises and workshops will be carried out. The average mark on those exercises (Nac) will weight a 60% of the final mark. The final exam will weight the rest 40%.

\[ N_{\text{final}} = 0.6 \times N_{\text{pf}} + 0.4 \times N_{\text{ac}} \]

The re-evaluation will consist on carrying out a practical exercise defined by the professors. This work will be focused on the aspects of the matter failed by the student. The student will be required to deliver a written report on the work at the day of the exam. Furthermore, the student could be asked for an oral presentation or written exam on the work.

Regulations for carrying out activities

The student not presenting to any of the proposed exercises, workshops and exam will be qualified as "not taken"
Bibliography

Basic:


Others resources: