280812 - Advanced Project of the Ship

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering
Academic year: 2019
Degree: MASTER'S DEGREE IN NAVAL AND OCEAN ENGINEERING (Syllabus 2017). (Teaching unit Compulsory)
ECTS credits: 5
Teaching languages: Catalan, Spanish, English

Teaching staff

Coordinator: RAFAEL PACHECO BLAZQUEZ
Others: Primer quadrimestre:
RAFAEL PACHECO BLAZQUEZ - 1

Opening hours

Timetable: Tuesday from 11:00h to 13:00h; by appointment in all the cases.

Prior skills

Remember teh basic concepts referred to "Ship Design", studied in the MARINE TECNOLOGY GRADE/ SYSTEMS ENGINEERING AND NAVAL TECNOLOGY GRADE.

Requirements

Remember teh basic concepts referred to "Ship Design", studied in the MARINE TECNOLOGY GRADE/ SYSTEMS ENGINEERING AND NAVAL TECNOLOGY GRADE.

Degree competences to which the subject contributes

Basic:
CB6. Possess knowledge and understanding that provide a basis or opportunity to be original in the development and / or application of ideas, often in a research context.
CB9. That students can communicate their conclusions and the knowledge and latest rationale underpinning to specialists and non-specialists clearly and unambiguously.
CB10. Students must possess the learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.

Specific:
CE1. (ENG) Capacidad para proyectar buques adecuados a las necesidades del transporte marítimo de personas y mercancías, y a las de la defensa y seguridad marítimas.
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**Teaching methodology**

In this subject three different docent methodologies are combined:
- Presental exposition sessions of the contents of the subject, in which the professor shall introduce the theoretical basis of the subject by means of examples that easy their understanding.
- Presental practical coursework sessions by means of explaining the development of such exercises, problems and algorithms in which the professor will guide the students in the application of theoretical concepts.
- Autonomous study and undertaking of exercise and activities in which the students will apply the knowledge developed during the presental sessions. Inclusion of brief MATLAB assignments, which will require the submission of a report.

**Learning objectives of the subject**

Understanding of the basic concepts related to ship design.

Capability to resolve mathematic problems applied to ship design.

Understanding of the algorithms, numerical methods basic tools and systems to solve such problems.

**Study load**

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

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<th>Organisation and mission requirements</th>
<th>Learning time: 7h 30m</th>
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<td>Theory classes: 3h</td>
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**Description:**
Organisation of ship design and parametric design.

<table>
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<tr>
<th>Form generation and preliminary powering</th>
<th>Learning time: 10h 30m</th>
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**Description:**
Form generation and preliminary powering

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<th>Arrangements, structure and displacement</th>
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**Description:**
Arrangements, structure and displacement

<table>
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<th>Manoeuvring, stability and seakeeping</th>
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**Description:**
Manoeuvring, stability and seakeeping.

<table>
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<th>Floodable length and freeboard</th>
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<td>Self study : 4h 30m</td>
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**Description:**
Floodable length and freeboard.
### Intact and damaged stability

**Description:**
Intact and damaged stability.

**Learning time:** 10h 30m  
- Theory classes: 3h  
- Guided activities: 3h  
- Self study: 4h 30m

### Economic Management, Quality Management and Environmental Management

**Description:**
Economic Management, Quality Management and Environmental Management.

**Learning time:** 18h  
- Theory classes: 6h  
- Guided activities: 3h  
- Self study: 9h

### Practical case review

**Description:**
Practical case review.

**Learning time:** 6h  
- Theory classes: 6h

### Qualification system

The final grade is the sum of the partial grades below:

\[ G_{\text{final}} = 0.5 \times C_w + 0.5 \times F_p \]

- **On:**  
  - \( G_{\text{final}} \): Final grade.  
  - \( C_w \): Coursework grade.  
  - \( F_p \): Final presentation grade.
Regulations for carrying out activities

Rules for the fulfilment of the course activities:

Coursework Assessment:
Individual/groupal undertaking and submission of the courseworks. A report shall be submitted within the deadline. Any coursework delivered out of the deadline shall be qualified with a penalty of 10% less per day out of the deadline, meaning that a submission over 10 days would be equivalent to a 0.

Presentation:
Presentations will be in groups. A not have taken qualification will be awarded to the student who does not present in the day selected for the presentation.

Bibliography

Basic: