280803 - Oceanography

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 751 - DECA - Department of Civil and Environmental 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

Teaching staff

Coordinator: MANEL ESPINO INFANTES
Others: Primer quadrimestre: MANEL ESPINO INFANTES - 1
Gironella I Cobos, Francesc Xavier

Degree competences to which the subject contributes

Basic:
CB9. That students can communicate their conclusions and the knowledge and Latest rationale underpinning to specialists and non Specialty clearly and unambiguously
CB8. Students should be able to integrate knowledge and handle the complexity of making judgments based on information that, being incomplete or limited, includes reflections on the responsibilities social and ethical linked to the application of their knowledge and judgments.
CB6. Possess knowledge and understanding that provide a basis or opportunity be original in the development and / or application of ideas, often in a research context.
CB7. That the students can apply their knowledge and ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their study area.
CB10. Students must possess the learning skills that enable them
To familiarize the student with the concepts of physical, chemical, geological and biological oceanography necessary for the performance of his future activity in the field of Naval and Oceanic engineering in a manner that respects the marine environment and sustainable from a technical, economic and environmental point of view.

Learning objectives of the subject

To familiarize the student with the concepts of physical, chemical, geological and biological oceanography necessary for the performance of his future activity in the field of Naval and Oceanic engineering in a manner that respects the marine environment and sustainable from a technical, economic and environmental point of view.

Study load

| Total learning time: 45h | Hours large group: | 45h | 100.00% |
# Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Learning time:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction to Oceanography</strong></td>
<td>6h</td>
<td>Presentation of the subject. Introduction to the concepts of physical oceanography, chemical oceanography, geological oceanography and biological scenography. History of the Oceanography.</td>
</tr>
<tr>
<td><strong>Marine Geology</strong></td>
<td>8h</td>
<td>The bathymetry of the ocean: continental margins and ocean basins. Geophysical techniques for prospecting the ocean floor. Sedimentation in the ocean. Techniques for sampling sediment in the background.</td>
</tr>
<tr>
<td><strong>Meteorology and ocean circulation</strong></td>
<td>26h</td>
<td>Atmospheric processes and general wind circulation. Surface ocean currents: wind currents, inertial currents, geostrophic currents and mesoscale currents. Thermohaline deep circulation. Techniques for measuring ocean currents.</td>
</tr>
</tbody>
</table>
## Waves, Tsunamis and Seiches

**Learning time:** 19h  
Theory classes: 6h  
Practical classes: 3h  
Guided activities: 5h  
Self study: 5h

**Description:**  

## Tides and currents

**Learning time:** 16h  
Theory classes: 4h  
Practical classes: 2h  
Guided activities: 5h  
Self study: 5h

**Description:**  

## Marine Ecology

**Learning time:** 9h  
Theory classes: 2h  
Practical classes: 1h  
Guided activities: 3h  
Self study: 3h

**Description:**  
Habitats in the Ocean. Classification of marine organisms. Functioning of marine ecosystems. Trophic chains and types of ecosystems. Coastal outcrops and productivity in the ocean.
Marine pollution

Learning time: 26h
- Theory classes: 3h
- Practical classes: 3h
- Guided activities: 11h
- Self study: 9h

Description:

Qualification system

The final grade is the sum of the following partial grades:
Final qualification = (0.6 x Final test qualification) + (0.4 x Qualification of the course exercises)

Bibliography

Basic:

Complementary: