280607 - Chemistry

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 713 - EQ - Department of Chemical Engineering
Academic year: 2017
Degree: BACHELOR'S DEGREE IN MARINE TECHNOLOGIES/BACHELOR'S DEGREE IN NAVAL SYSTEMS AND TECHNOLOGY ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN NAVAL SYSTEMS AND TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN NAUTICAL SCIENCE AND MARITIME TRANSPORT (Syllabus 2010). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MARINE TECHNOLOGIES (Syllabus 2010). (Teaching unit Compulsory)
ECTS credits: 6
Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: LUIS JAVIER DEL VALLE MENDOZA
Others: LUIS JAVIER DEL VALLE MENDOZA - 1
DAVID ZANUY GOMARA - 1
ADRIANA FARRAN MARSA - 1
JOAN DE PABLO RIBAS - 1

Opening hours
Timetable: Monday and Tuesday 10:00-12.00 h

Degree competences to which the subject contributes

Specific:
1. Basic knowledge of general chemistry, organic and inorganic chemistry and its applications in engineering.
2. Basic knowledge of general chemistry, organic and inorganic chemistry and its applications in the field of naval engineering technology.

Teaching methodology

* Receive, understand and synthesize knowledge.
* Set up and solve problems.
* Develop critical thinking and reasoning and defend it orally or in writing.
* Submit the report of the labs individually and / or group.

Learning objectives of the subject

Specific Objectives:
1. Basic knowledge of general chemistry, organic and inorganic chemistry and their applications in engineering.
2. Basic knowledge of general chemistry, organic and inorganic chemistry and its applications in the field of naval engineering technique.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group:</th>
<th>30h</th>
<th>20.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>24h</td>
<td>16.00%</td>
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<tr>
<td></td>
<td>Hours small group:</td>
<td>6h</td>
<td>4.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
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</tbody>
</table>
## Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Learning time</th>
<th>Theory classes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemical elements and chemical bonding.</strong></td>
<td>9h</td>
<td>9h</td>
</tr>
<tr>
<td><strong>Dissolutions.</strong></td>
<td>9h</td>
<td>9h</td>
</tr>
<tr>
<td><strong>Inorganic and organic compounds.</strong></td>
<td>5h</td>
<td>5h</td>
</tr>
<tr>
<td><strong>Elemental analysis, analysis of water and organic compounds.</strong></td>
<td>4h</td>
<td>4h</td>
</tr>
<tr>
<td>Description: Water analysis: nautical main parameters of interest. Analysis of fuel: nautical main parameters of interest.</td>
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<tr>
<td><strong>States of matter.</strong></td>
<td>3h</td>
<td>3h</td>
</tr>
<tr>
<td>Description: Types of intermolecular interactions. Theory of ideal gases. Introduction to metallic and ionic packaging. Introduction to phase equilibrium.</td>
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</table>
Planning of activities

<table>
<thead>
<tr>
<th>Laboratory practices</th>
<th>Hours: 4h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Guided activities: 1h</td>
</tr>
<tr>
<td></td>
<td>Laboratory classes: 2h</td>
</tr>
<tr>
<td></td>
<td>Self study: 1h</td>
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</tbody>
</table>

Description:
1. Physical-chemical water analysis.
2. Acid-base titrations.

Support materials:
Own chemistry laboratory.

Descriptions of the assignments due and their relation to the assessment:
Individual report and / or group of laboratory practices.

Specific objectives:
* Consolidate the theoretical knowledge on the subject of chemistry.
* Develop skills and abilities to work in a chemistry laboratory.
* Promote respect for the environment through the management of chemical waste (greening the subject).

Qualification system

For instance:
The final score is the sum of the following partial scores:
Final score = 0.5 SF + 0.35 SP + 0.15 SL

SF: Final test
SP: Partial test
SL: laboratory teaching qualification (lab, computer room).
The final test consists of part types with test questions and issues associated with the learning objectives of the course concepts in knowledge and / or understanding, and a set of exercises and application problems. It has about 3 hours to do it.
Continuous assessment and partial test is to do different activities, both individual and group, summative and formative, carried out during the course.
The rating of the laboratory teaching is the average of the laboratory activities.
REEvalUATION
Reassessment scheduled for the subject of Chemistry, is an optional situation chosen by the student that it deems appropriate. The reassessment requirement is to have completed the labs. The event will consist of a single test that considers the entire contents of the subject. The test methodology consists reassessment of part types with test questions and issues associated with the learning objectives of the course concepts in knowledge and / or understanding, and a set of exercises and application problems.

Regulations for carrying out activities

* If it is not any laboratory activities, continuous assessment or final test performed, shall be deemed not scored.
* It is deemed not-presented to students who have not made any test, either the final or continuous assessment or has performed more than a practice.
* In any case you can have any kind of form controls learning or testing.
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Bibliography

Basic:

Complementary: