Course guides
220006 - Q - Chemistry

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 713 - EQ - Department of Chemical Engineering.

Degree: BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Compulsory subject).
BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Compulsory subject).

Academic year: 2020 ECTS Credits: 6.0 Languages: Catalan

LECTURER

Coordinating lecturer: Cortes Izquierdo, M. Pilar

Others: Torrades Carne, Francesc
Cervantes Torre-Marin, Gemma
Curcoll Masanes, Roger
Valverde Salamanca, Abel
Buscio Olivera, Valentina
Morillo Cazorla, Margarita

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. An understanding of the basic principles of general, organic and inorganic chemistry and the ability to apply this knowledge in engineering

Transversal:
2. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 1. Analyzing the world's situation critically and systemically, while taking an interdisciplinary approach to sustainability and adhering to the principles of sustainable human development. Recognizing the social and environmental implications of a particular professional activity.

TEACHING METHODOLOGY

- Large group lessons: Development of theoretical concepts.
- Medium group lessons: Application of the theoretical concepts seen in big group lessons or acquired by the student through self-learning processes.
- Small group lessons: Laboratory practicals.
The Atenea platform will be used as a support tool to the three varieties of lessons described above. It would be used as a way of communication between the students and the teacher.

LEARNING OBJECTIVES OF THE SUBJECT

Providing basic chemistry knowledge to other related subjects. Relate and apply theoretical concepts both in solving problems and laboratory practices.
## STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group</td>
<td>14,0</td>
<td>9.33</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>32,0</td>
<td>21.33</td>
</tr>
<tr>
<td>Hours small group</td>
<td>14,0</td>
<td>9.33</td>
</tr>
</tbody>
</table>

**Total learning time: 150 h**

## CONTENTS

1. **Introduction to chemistry.**
   
   **Description:**
   
   **Related activities:**
   
   **Full-or-part-time:** 40h
   Theory classes: 4h
   Practical classes: 3h
   Laboratory classes: 7h
   Self study: 26h

2. **Atomic structure. Periodic table of elements.**
   
   **Description:**
   
   **Related activities:**
   
   **Full-or-part-time:** 12h
   Theory classes: 3h
   Practical classes: 1h
   Self study: 8h

3. **Molecular structure.**
   
   **Description:**
   
   **Related activities:**
   
   **Full-or-part-time:** 16h
   Theory classes: 6h
   Practical classes: 1h
   Self study: 9h

**Description:**

**Related activities:**

- **Full-or-part-time:** 20h
  - Theory classes: 6h
  - Practical classes: 2h
  - Self study: 12h


**Description:**

**Related activities:**

- **Full-or-part-time:** 38h
  - Theory classes: 6h
  - Practical classes: 5h
  - Laboratory classes: 7h
  - Self study: 20h

6. Electrochemistry

**Description:**

**Related activities:**

- **Full-or-part-time:** 16h
  - Theory classes: 4h
  - Practical classes: 2h
  - Self study: 10h

7. Organic chemistry.

**Description:**

**Related activities:**

- **Full-or-part-time:** 8h
  - Theory classes: 3h
  - Self study: 5h

**ACTIVITIES**

**ACTIVITY 1: THEORY SESSIONS**

- **Full-or-part-time:** 68h
  - Theory classes: 25h
  - Self study: 43h
ACTIVITY 2: PROBLEM SESSIONS
Full-or-part-time: 33h
Practical classes: 14h
Self study: 19h

ACTIVITY 3: LABORATORY
Full-or-part-time: 32h
Laboratory classes: 14h
Self study: 18h

ACTIVITY 4: MIDTERM EXAM
Full-or-part-time: 3h
Theory classes: 3h

ACTIVITY 5: FINAL EXAM
Full-or-part-time: 3h
Theory classes: 3h

ACTIVITY 6: FORMULATION EXAM
Full-or-part-time: 11h
Theory classes: 1h
Self study: 10h

GRADING SYSTEM
Note global = 0,20 x N1P + 0,50 x N2P + 0,20 x NL + 0,10 x NAD
NL: Laboratory practices. Activity 3 of this guide
NAD: Guided activity 6
N1P First midterm exam
N2P Final exam
in case of failure of the midterm exam N1P, there will be the chance to recover it in the following way:
=0,70xN2P + 0,20 x NL + 0,10 x NAD, if N2P>N1P
BIBLIOGRAPHY

Basic:

Complementary:
- Formulació i nomenclatura segons normativa IUPAC.

RESOURCES

Hyperlink:
- http://www.webelements.com/
- http://www.periodicvideos.com/#