Course guide
240017 - 240017 - Chemistry I

Unit in charge: Barcelona School of Industrial Engineering
Teaching unit: 713 - EQ - Department of Chemical Engineering.

Degree: Academic year: 2023 ECTS Credits: 6.0
Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: Abdelilah Alla Bedahnane
Montserrat García Álvarez

Others: Abdelilah Alla Bedahnane
Montserrat García Álvarez
Joana Lalueza Baro

TEACHING METHODOLOGY

Classroom sessions:
- Theory Classes: The necessary theoretical concepts for the development of the subject will be introduced. They will be taught with the aid of audiovisual resources.
- Problem-solving Classes: The theoretical knowledge will be applied to problem-solving, actively involving the students in the process.
- Experimental Activities: Practical work complementing the theory or problem-solving classes, allowing students to relate theoretical concepts to experimental determinations. These activities can be done individually or in groups.
- Directed Activities: Additional assignments to further explore specific topics covered in the face-to-face classes. These activities can be done individually or in groups.

LEARNING OBJECTIVES OF THE SUBJECT

- Provide an introduction to the basic principles of both inorganic and organic chemistry necessary for the effective understanding of subjects related to various areas of engineering.
- Apply the acquired basic knowledge to comprehend the structure and bonds of different materials, in order to understand the physical and chemical properties of the main compounds of interest in the field of engineering.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory classes</td>
<td>56.0</td>
<td>93.33</td>
</tr>
<tr>
<td>Laboratory classes</td>
<td>4.0</td>
<td>6.67</td>
</tr>
</tbody>
</table>

Total learning time: 60 h
CONTENTS

**Lecture 1: Fundamentals of chemistry**

**Description:**

**Full-or-part-time:** 10h
Theory classes: 4h
Self study: 6h

**Lecture 2: Chemical bond**

**Description:**

**Full-or-part-time:** 20h
Theory classes: 4h
Practical classes: 4h
Self study: 12h

**Lecture 3: Intermolecular forces and solid structures**

**Description:**

**Full-or-part-time:** 20h
Theory classes: 4h
Practical classes: 4h
Self study: 12h

**Lecture 4: Introduction to Organic Chemistry**

**Description:**

**Full-or-part-time:** 30h
Theory classes: 6h
Practical classes: 6h
Self study: 18h
Lecture 5: Hydrocarbons

Description:

Full-or-part-time: 30h
Theory classes: 6h
Practical classes: 6h
Self study : 18h

Lecture 6: Organic compounds and functional groups

Description:

Full-or-part-time: 30h
Theory classes: 6h
Practical classes: 6h
Self study : 18h

GRADING SYSTEM

The final grade (NF) will be:
NF = max. (EF, 0,2*EP+0,2*PAC + 0.05* NP+0,55*EF)

1) Continuous assessment grade: PAC
2) Mid-term exam grade: EP
2) Practice grade: NP
3) Exam grade: EF

The final reassessment grade will be calculated based on: NF = 1.0*ReAv
Reassessament exam grade: ReAv

BIBLIOGRAPHY

Basic:
- Petrucci, Ralph H; Pando García-Pumarino, Concepción; Rodríguez Renuncio, Juan A; Iza Cabo, Nerea; Bissonnette, Carey; Madura, Jeffry D; Herring, F. Geoffrey. Química general : principios y aplicaciones modernas . Undécima edición. ©2017. ISBN 9788490355336.
Complementary: