Course guides
330454 - QO - Organic Chemistry

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.
Degree: BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Compulsory subject).
Academic year: 2020  ECTS Credits: 6.0  Languages: Catalan

LECTURER
Coordinating lecturer: Heras Cisa, Francesc Xavier De Las

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. (ENG) Comprendre i utilitzar els principis i la seva aplicació en química orgànica.
2. (ENG) Desenvolupar la capacit d’anàlisi en la resolució de problemes.
3. (ENG) Desenvolupar el raonament crític.
4. (ENG) Tenir capacitat de formar-se de forma autònoma.
5. (ENG) Funcionar de forma eficient a nivell individual i/o en equip.
6. (ENG) Argumentar de forma clara a tercers els coneixements adquirits.

Transversal:
7. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.

TEACHING METHODOLOGY
The subject consists on 4 classroom hours, devoted to explain theoretical fundamental and to the solution of practical problems.

LEARNING OBJECTIVES OF THE SUBJECT
The aim of the subject is to let know the organic chemistry of the laboratory and industrial, the description of different families of compounds as well as the formation of the intermediates required to obtain the final products.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group</td>
<td>15,0</td>
<td>10.00</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>45,0</td>
<td>30.00</td>
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Total learning time: 150 h
<table>
<thead>
<tr>
<th>Title of the content 1: Biomolecules: Glucides</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
</tr>
<tr>
<td><strong>Full-or-part-time:</strong> 10h</td>
</tr>
<tr>
<td>Theory classes: 4h</td>
</tr>
<tr>
<td>Self study : 6h</td>
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<thead>
<tr>
<th>Title of the content 2: Biomolecules: Lipids</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 10h</td>
</tr>
<tr>
<td>Theory classes: 4h</td>
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<tr>
<td>Self study : 6h</td>
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<tr>
<th>Title of the content 3: Biomolecules: Proteins</th>
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<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 5h</td>
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<tr>
<td>Theory classes: 2h</td>
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<tr>
<td>Self study : 3h</td>
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<thead>
<tr>
<th>Title of the content 4: Biomolecules: Nucleotides and nucleic acids</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 7h</td>
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<tr>
<td>Theory classes: 2h</td>
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<tr>
<td>Laboratory classes: 2h</td>
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<tr>
<td>Self study : 3h</td>
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<thead>
<tr>
<th>Title of the content 2: Introduction to Organic chemistry</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 15h</td>
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<tr>
<td>Theory classes: 6h</td>
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<tr>
<td>Self study : 9h</td>
</tr>
<tr>
<td>Title of the content 6: Study of the alkanes</td>
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<td>--------------------------------------------</td>
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<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 5h</td>
</tr>
<tr>
<td>Theory classes: 3h</td>
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<tr>
<td>Self study : 2h</td>
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<tr>
<th>Title of the content 7: Study of the alkanes and alkynes</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 15h</td>
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<tr>
<td>Theory classes: 6h</td>
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<tr>
<td>Self study : 9h</td>
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<tr>
<th>Title of the content 8: Study of the aromatic hydrocarbons</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 10h</td>
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<tr>
<td>Theory classes: 6h</td>
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<tr>
<td>Self study : 4h</td>
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<tr>
<th>Title of the content 9: Study of the halogenated compounds</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 10h</td>
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<tr>
<td>Theory classes: 6h</td>
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<tr>
<td>Self study : 4h</td>
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<thead>
<tr>
<th>Title of the content 10: Study of the oxygenated compounds</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
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<tr>
<td><strong>Full-or-part-time:</strong> 20h</td>
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<tr>
<td>Theory classes: 8h</td>
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<tr>
<td>Self study : 12h</td>
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</table>
Title of the content 11: Study of the nitrogenated compounds

Description:
Nature and industry examples. Nomenclature. Physical properties and characterization. Industrial synthesis: C1, lactams. Main uses as final products. Reactivity in the laboratory

Full-or-part-time: 7h
Theory classes: 2h
Laboratory classes: 2h
Self study: 3h

ACTIVITIES

Title of the activity 1: Written individual exam

Description:
Individual exams in the classroom to assess theoretical concepts and problem solving related with the content of the subject
A) 3 partial exams lasting 2 h will be done
Exam 1: Contents 1, 2, 3 & 4
Exam 2: Contents 5, 6, 7 & 8
Exam 3: Contents 9, 10 & 11
B) Unique Exam lasting 3 h will be done: Contents from 1 to 11

Specific objectives:
To understand the theoretical concepts of the related contents

Material:
Statements

Delivery:
Solving the exams and writing the results

Full-or-part-time: 15h
Theory classes: 6h
Self study: 9h

GRADING SYSTEM

A) Continuous assessment
3 individuals (evaluable exercise: 1, 2, 3 & 4): 33 %
(evaluable exercise: 5, 6, 7 & 8): 33 %
(evaluable exercise: 9, 10 & 11): 33 %

B) Unique assessment
Individual exam (activity assessed from 1 al 11): 100 %

The final score will be the maximum value obtained according to the system A) or B).

EXAMINATION RULES.

- Class attendance
- Carrying out individual exams
BIBLIOGRAPHY

Basic:

Complementary: