Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Other comments on languages

English use is not expected at classroom

Teachers

Jordi Marquet Cortés

Prerequisites

It would be convenient to have taken or be studying the courses "Fonaments of chemistry" and "Termodinàmica i cinètica".

Objectives and Contextualisation

The main goals of this course are that the student could achieve the necessary knowledge in order to understand the molecular structures and main chemical reactions involved in biochemical processes. Thus, special focus will be made in the different mechanism that usual organic reactions follow. Organic molecules are involved in both primary and secondary metabolism, being fundamental part in the biosynthesis and different transformations of carbohydrates, amino acids, peptides and proteins, along with the nucleic acids. In order to understand other processes as the mechanism of action of drugs and their metabolism, knowledge of organic chemistry is also mandatory.

Competences

- Identify molecular structure and explain the reactivity of the different biomolecules: carbohydrates, lipids, proteins and nucleic acids.
- Interpret experimental results and identify consistent and inconsistent elements.
- Manage information and the organisation and planning of work.
- Read specialised texts both in English and one's own language.
Learning Outcomes

2. Explain the effect of the three-dimensional structure of molecules on biological activity.
3. Identify the functional organic groups and describe their chemical properties.
4. Interpret experimental results and identify consistent and inconsistent elements.
5. Manage information and the organisation and planning of work.
6. Read specialised texts both in English and ones own language.

Content


Methodology

The development of the course is based on the following activities:

Magisterial classes

The student gets the scientific and technical knowledge of the matter attending magisterial classes that will be complemented with the personal study of the commented topics. Magisterial classes involve small interaction with the student and they are conceived as a unidirectional method of knowledge transmission from the teacher to the student.

Oral presentations of works by the students

The student applies the scientific and technical knowledge acquired in magisterial classes as well as by means of bibliographic search on a specific topic prepared with other students that will be presented followed by responses to the teacher or the other students. Herein, the interaction with the student is stronger.
Seminars (problem resolution)

The comprise sessions in which the knowledge from magisterial classes is worked in a critical and deep manner. The main goal is to promote the analysis and synthesis skills, the critical reasoning and the ability to solve problems.

Activities

<table>
<thead>
<tr>
<th>Title</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: Directed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercises and problems</td>
<td>16</td>
<td>0.64</td>
<td>1, 2, 5, 3, 4, 6</td>
</tr>
<tr>
<td>Magisterial classes</td>
<td>32</td>
<td>1.28</td>
<td>1, 2, 5, 3, 4, 6</td>
</tr>
<tr>
<td>Type: Autonomous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study and resolution of exercises</td>
<td>95</td>
<td>3.8</td>
<td>1, 2, 3, 4, 6</td>
</tr>
</tbody>
</table>

Assessment

Examinations

In the examinations, the knowledge of the contents in the course program will be evaluated with special emphasis in the resolution of problems.

There will be two qualifying examinations that will be mandatory and that will be carried out in April (40%) and June (50%) and a possible final examination at the end of June.

Evidences

They will be carried out over the course and will consist in exercises or short works that will be made in an individual way or in a group, in the classroom or at home. The works no presented will compute a 0 when the average will be calculated. The overall qualification of all evidences will be a 10% of the final mark.

To pass the course, it is necessary:

a) To have a mark \( \geq 5.0 \) in both qualifying examinations.

Those students that do not achieve the requirement a), must pass the course at the final examination, which will include all the subjects of the course.

To participate in the final examination in order to pass the course, the students should have been evaluated in several activities whose relative weight will be \( \geq 2/3 \) of the overall qualification of the course. If the evaluation activities carried out represents a balanced weight \( \leq 67\% \) of the final mark, the student will be "not able to be evaluated".

The students that pass the qualifying examinations but want to improve the mark can attend the final examination. In this case, the final mark will be that of the final examination.

It is mandatory to get a mark \( \geq 5.0 \) over 10 in the overall evaluation to pass the course.

Assessment Activities

<table>
<thead>
<tr>
<th>Title</th>
<th>Weighting</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning Outcomes</th>
</tr>
</thead>
</table>
Evidences

10%  1  0.04  2, 5, 3, 6

Qualifying examinations

90%  6  0.24  1, 2, 5, 3, 4, 6

Bibliography


(3) https://www.organic-chemistry.org/

Other references will be indicated during the course