295031 - QQ - Chemistry

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 713 - EQ - Department of Chemical Engineering
Academic year: 2017
Degree: BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits: 6

Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: Revilla López, Guillem
Others: Armelin Diggroc, Elaine Aparecida
Zanuy Gomara, David

Degree competences to which the subject contributes

Specific:
CEB-04. Understand the fundamental principles of general, organic and inorganic chemistry and apply them in engineering.
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Teaching methodology

Lectures:
The lectures (lectures or participatory lectures) will be used to introduce theoretical knowledge and will be combined with directed activities to solve individual or group problems; and laboratory practice sessions related to some topics present in the syllabi of this class.

Lectures will be structured in sessions of 2h per week.

On-site classes will gradually introduce some concepts of active learning and cooperative learning in order to achieve the specific objectives of the class and develop their learning skills.

The resolution of exercises and problems refer to the resolution of numerical problems related to the contents, as well as questions about concepts or examples of the syllabus of the class. Teachers will propose directed activities, in the form of individual or group work, which may be qualified or not according to the type of material to be delivered (problem solving, exercises resolution, monographic works, questionnaires type QUIC-Questionnaire Of Critical Incidents, among others).

The laboratory practical sessions are directed activities of 2h of duration and will be realized in small groups (between 10 and 30 students). Students will be distributed in pairs or groups of 3-4 people to optimize the use of available resources and to encourage student - student and student - teacher interaction. The practices are related to the contents of the class and are intended to familiarize the student with some basic concepts of the subject. Internships are compulsory and will be graded according to the delivery of short-term reports or tests at the end of each session.

Non-presential dedication:
Teachers will propose autonomous learning activities in the form of individual or group work at the end of each face-to-face session or through the use of the ATENEA virtual campus. The hours of non-presential dedication in the subject are distributed according to the degree of difficulty of each syllabus and are detailed in the "Contents" section of the teaching file.

Virtual Campus ATENEA:
Students should check the ATENEA virtual campus regularly for programmed targeted activities, test and practice dates, and to consult instructional materials on theory, problems or practices available for self-directed or directed learning. Students should attend lecture sessions with the necessary teaching material to follow the course (slides, problem notebook, practice scripts, calculator, among others). Otherwise, the teacher has the power to act given the situation of requirement of the agenda.

Learning objectives of the subject

To provide students of Chemical Engineering with an introduction to the basic principles of General Chemistry, Inorganic Chemistry and Organic Chemistry necessary for successfully following the next subjects related to different areas of Engineering. To apply the basic knowledge acquired to understand the properties and applications of the main compounds of interest in Engineering.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Theory classes: 52h 30m 35.00%</th>
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<tbody>
<tr>
<td></td>
<td>Practical classes: 0h 0.00%</td>
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<tr>
<td></td>
<td>Laboratory classes: 7h 30m 5.00%</td>
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<td></td>
<td>Guided activities: 0h 0.00%</td>
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<tr>
<td></td>
<td>Self study: 90h 60.00%</td>
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<tr>
<td>Title</td>
<td>Learning Time</td>
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<tr>
<td>13h</td>
<td>Theory classes: 6h</td>
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<td></td>
<td>Guided activities: 1h</td>
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<tr>
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<td>Self study: 6h</td>
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<tr>
<td>33h</td>
<td>Theory classes: 14h</td>
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<td></td>
<td>Guided activities: 2h</td>
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<td></td>
<td>Self study: 17h</td>
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<tr>
<td>19h</td>
<td>Theory classes: 8h</td>
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<td>Guided activities: 2h</td>
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<td>Self study: 9h</td>
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<tr>
<td>9h 30m</td>
<td>Theory classes: 4h</td>
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<td>Guided activities: 1h</td>
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<td>Self study: 4h 30m</td>
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Qualification system

This class has five different evaluation elements, distributed throughout the semester:

The final grade (Nf) will be calculated according to the following table:

Type of evaluation: Continuous evaluation
Final exam (Nef) = 50%
Partial exam (Npp) = 30%
Exercises Group 1 (Neg1) = 7.5%
Exercises Group 2 (Neg2) = 7.5%
Laboratory practices (Nep) = 5%

Final grade (Nf): 0.5 Nef + 0.3 Npp + 0.075 Neg1 + 0.075 Neg2 + 0.05 Nep
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Bibliography

Basic:


Complementary:


Others resources: