820523 - EPQ - Chemical Process Engineering

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 713 - EQ - Department of Chemical Engineering
Academic year: 2019
Degree: BACHELOR’S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits: 6
Teaching languages: Catalan, Spanish, English

Teaching staff
Coordinator: ANTONIO ESPUÑA CAMARASA
Others: Primer quadrimestre: ANTONIO ESPUÑA CAMARASA - M11 EDUARD SANMARTI VILA - M21

Opening hours
Timetable: Please check the Spanish version

Prior skills
Please check the Spanish version

Requirements
OPERACIONS BÀSIQUES II - Prerequisite
SIMULACIÓ I OPTIMITZACIÓ DE PROCESSOS QUÍMICS - Prerequisite

Degree competences to which the subject contributes
Specific:
2. Analyse, design, simulate and optimise processes and products.
CEQUI-22. Design, manage and run simulation, control and instrumentation procedures in chemical processes.
CEQUI-26. Study the feasibility of a proposed project.

CEQUI-27. Understand spatial vision and graphic representation techniques, whether using traditional metric and
descriptive geometry methods or computer assisted design applications.
12. Understand mass and energy balances, biotechnology, mass transfer, separation operations, chemical reaction
engineering, the design of reactors, and the recovery and processing of raw materials and energy resources.

Generical:
CG-04. (ENG) Capacidad de resolver problemas con iniciativa, toma de decisiones, creatividad, razonamiento crítico y
de comunicar y transmitir conocimientos, habilidades y destrezas en el campo de la Ingeniería Industrial.
CG-07. (ENG) Capacidad de analizar y valorar el impacto social y medioambiental de las soluciones técnicas.

Transversal:
14. 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.


22. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.

25. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

Teaching methodology

Please check the Spanish version

Learning objectives of the subject

Please check the Spanish version

Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 30h</th>
<th>20.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Hours small group: 30h</td>
<td>20.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Self study: 90h</td>
<td>60.00%</td>
</tr>
<tr>
<td>Section</td>
<td>Learning time</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Introduction</strong></td>
<td>12h</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Theory classes: 3h</td>
</tr>
<tr>
<td><strong>Computational tools</strong></td>
<td>16h</td>
<td></td>
</tr>
<tr>
<td>(Simulation and optimization)</td>
<td></td>
<td>Theory classes: 1h</td>
</tr>
<tr>
<td><strong>Process Synthesis</strong></td>
<td>12h</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Theory classes: 4h</td>
</tr>
<tr>
<td>Process Analysis</td>
<td>Learning time: 8h</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Theory classes: 4h</td>
<td></td>
</tr>
<tr>
<td>Please check the Spanish version.</td>
<td>Self study: 4h</td>
<td></td>
</tr>
<tr>
<td><strong>Related activities:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please check the Spanish version.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Specific objectives:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please check the Spanish version.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Engineering</th>
<th>Learning time: 12h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theory classes: 4h</td>
</tr>
<tr>
<td>Please check the Spanish version.</td>
<td>Self study: 8h</td>
</tr>
<tr>
<td><strong>Related activities:</strong></td>
<td></td>
</tr>
<tr>
<td>Please check the Spanish version.</td>
<td></td>
</tr>
<tr>
<td><strong>Specific objectives:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Separation systems engineering</th>
<th>Learning time: 12h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theory classes: 1h</td>
</tr>
<tr>
<td>Please check the Spanish version.</td>
<td>Laboratory classes: 3h</td>
</tr>
<tr>
<td><strong>Related activities:</strong></td>
<td>Guided activities: 8h</td>
</tr>
<tr>
<td>Please check the Spanish version.</td>
<td></td>
</tr>
<tr>
<td><strong>Specific objectives:</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Reaction Systems Engineering

**Description:**
Please check the Spanish version.

**Related activities:**
Please check the Spanish version.

**Specific objectives:**
Please check the Spanish version.

**Learning time:** 6h
- Theory classes: 1h
- Laboratory classes: 1h
- Guided activities: 4h

### Control Systems Engineering

**Description:**
Please check the Spanish version.

**Related activities:**
Please check the Spanish version.

**Specific objectives:**
Please check the Spanish version.

**Learning time:** 4h
- Theory classes: 1h
- Laboratory classes: 1h
- Guided activities: 2h

### Process Integration

**Description:**
Please check the Spanish version.

**Related activities:**
Please check the Spanish version.

**Specific objectives:**
Please check the Spanish version.

**Learning time:** 23h
- Theory classes: 3h
- Laboratory classes: 6h
- Guided activities: 14h
### Qualification system

Please check the Spanish version.

### Regulations for carrying out activities

Please check the Spanish version.

### Bibliography

**Basic:**


**Complementary:**


**Others resources:**

Please check the Spanish version.