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)
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.

General:

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:</th>
<th>30h</th>
<th>20.00%</th>
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<tbody>
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<td></td>
<td>Hours medium group:</td>
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</tr>
<tr>
<td></td>
<td>Hours small group:</td>
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<tr>
<td></td>
<td>Guided activities:</td>
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</tr>
<tr>
<td></td>
<td>Self study:</td>
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# 820523 - EPQ - Chemical Process Engineering

## Content

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<tr>
<th>Introduction</th>
<th>Learning time: 12h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 3h</td>
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<tr>
<td></td>
<td>Laboratory classes: 3h</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 6h</td>
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**Description:**
Please check the Spanish version.

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

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

<table>
<thead>
<tr>
<th>Computational tools (Simulation and optimization)</th>
<th>Learning time: 16h</th>
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<td>Laboratory classes: 7h</td>
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<td>Guided activities: 8h</td>
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**Description:**
Please check the Spanish version.

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

<table>
<thead>
<tr>
<th>Process Synthesis</th>
<th>Learning time: 12h</th>
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<tr>
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<td>Theory classes: 4h</td>
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<td></td>
<td>Self study: 8h</td>
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**Description:**
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**Related activities:**
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**Specific objectives:**
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<th>Process Analysis</th>
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<td>Theory classes: 4h</td>
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<tr>
<td></td>
<td>Self study: 4h</td>
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**Description:**
Please check the Spanish version.

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

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

<table>
<thead>
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<th>Product Engineering</th>
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**Description:**
Please check the Spanish version.

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

**Specific objectives:**

<table>
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<th>Separation systems engineering</th>
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<td>Laboratory classes: 3h</td>
</tr>
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<td>Guided activities: 8h</td>
</tr>
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</table>

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

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

**Specific objectives:**
Please check the Spanish version.
## Reaction Systems engineering

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

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

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

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

## Control Systems Engineering

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

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

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

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

## Process Integration

**Learning time:** 23h  
Theory classes: 3h  
Laboratory classes: 6h  
Guided activities: 14h

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

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

**Specific objectives:**  
Please check the Spanish version.
Process Systems Engineering - complete case study

Description:
Please check the Spanish version.

Related activities:
Please check the Spanish version.

Specific objectives:
Please check the Spanish version.

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