820066 - MSSD - Modelling and Simulation of Dynamical Systems

**Coordinating unit:** 295 - EEBE - Barcelona East School of Engineering

**Teaching unit:** 707 - ESI AI - Department of Automatic Control

**Academic year:** 2015

**Degree:**
- Bachelor's Degree in Electrical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Mechanical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Chemical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Biomedical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Energy Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Mechanical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Energy Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Electrical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Industrial Electronics and Automatic Control Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Biomedical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Chemical Engineering (Syllabus 2009). (Teaching unit Optional)
- Bachelor's Degree in Industrial Electronics and Automatic Control Engineering (Syllabus 2009). (Teaching unit Optional)

**ECTS credits:** 6

**Teaching languages:** Catalan

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**Teaching staff**

**Coordinator:** Antoni Grau Saldes

**Others:** Montserrat Vallverdu

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**Degree competences to which the subject contributes**

**Specific:**
1. Analyse, design, simulate and optimise processes and products.
2. Design, manage and run simulation, control and instrumentation procedures in chemical processes.
3. Model and simulate systems.

**Transversal:**
4. 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.
5. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

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**Teaching methodology**

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**Learning objectives of the subject**

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## Study load

<table>
<thead>
<tr>
<th>Study load</th>
<th>Hours large group:</th>
<th>Hours medium group:</th>
<th>Hours small group:</th>
<th>Guided activities:</th>
<th>Self study:</th>
<th>Learning time:</th>
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<tbody>
<tr>
<td><strong>Total learning time:</strong></td>
<td>150h</td>
<td>45h</td>
<td>0h</td>
<td>15h</td>
<td>90h</td>
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## Content

**Content**

### (ENG) Tema 2. Modelització de Sistemes multitecnologia

**Learning time:** 35h
  - Theory classes: 10h
  - Laboratory classes: 4h
  - Self study: 21h

### (ENG) Tema 3. Simulació de sistemes continus.

**Learning time:** 35h
  - Theory classes: 10h
  - Laboratory classes: 4h
  - Self study: 21h

### (ENG) Tema 4. Mètodes numèrics d’integració

**Learning time:** 35h
  - Theory classes: 10h
  - Laboratory classes: 4h
  - Self study: 21h

### (ENG) Tema 5. Identificació de Sistemes

**Learning time:** 33h
  - Theory classes: 9h
  - Laboratory classes: 3h
  - Self study: 21h
Qualification system

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Bibliography