820066 - MSSD - Modelling and Simulation of Dynamical Systems

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 707 - ESAII - 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

Teaching staff
Coordinator: Antoni Grau Saldes
Others: Montserrat Vallverdu

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.

Teaching methodology

M

Learning objectives of the subject

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Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 45h</th>
<th>30.00%</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Hours small group: 15h</td>
<td>10.00%</td>
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<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>
</tbody>
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Content

(ENG) -

Learning time: 12h
- Theory classes: 6h
- Laboratory classes: 0h
- Self study: 6h

(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**