820075 - DSS - Dynamic Systems and Simulations

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 749 - MAT - Department of Mathematics
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 BIOMEDICAL 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: English

Teaching staff
Coordinator: GISELA PUJOL VAZQUEZ
Others: Leonardo Acho

Degree competences to which the subject contributes

Transversal:
2. 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.
3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.

Teaching methodology
Magistral class.

Learning objectives of the subject
Obtain extended mathematical tools.
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### Study load

<table>
<thead>
<tr>
<th>Study Component</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total learning time</td>
<td>150h</td>
<td></td>
</tr>
<tr>
<td>Hours large group</td>
<td>45h</td>
<td>30.00%</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Hours small group</td>
<td>15h</td>
<td>10.00%</td>
</tr>
<tr>
<td>Guided activities</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Self study</td>
<td>90h</td>
<td>60.00%</td>
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</table>
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## Content

<table>
<thead>
<tr>
<th>(ENG) - Complex Variable</th>
<th>Learning time: 31h 30m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Complex variable.</td>
<td></td>
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<table>
<thead>
<tr>
<th>(ENG) - Modelling</th>
<th>Learning time: 35h 40m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Mathematical models.</td>
<td></td>
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<tr>
<th>(ENG) - Z Transform</th>
<th>Learning time: 38h</th>
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<tbody>
<tr>
<td>Description: Z transform.</td>
<td></td>
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<tr>
<th>(ENG) - Fourier Transform</th>
<th>Learning time: 44h 50m</th>
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<tbody>
<tr>
<td>Description: Fourier series.</td>
<td></td>
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Planning of activities

(ENG) VARIABLE COMPLEXA

(ENG) MODELAT

(ENG) TRANSFORMADA Z

(ENG) FOURIER

Qualification system

Partial exams.

Bibliography

Basic:


Complementary: