330103 - AC - Circuit Analysis

Coordinating unit: 330 - EPSEM - Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering
Academic year: 2019
Degree: BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
ECTS credits: 6

Teaching languages: Catalan

Teaching staff
Coordinator: JOSEP FONT TEIXIDO

Degree competences to which the subject contributes

Specific:
1. (ENG) Adquirir els conceptes bàsics per a la resolució de circuits elèctrics i electrònics.
2. (ENG) Dissenyar i simular circuits electrònics.

Transversal:
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.
4. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
5. 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.
6. 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.
7. 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.

Learning objectives of the subject
### Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 45h 30.00%</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 0h 0.00%</td>
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<tr>
<td></td>
<td>Hours small group: 15h 10.00%</td>
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<td></td>
<td>Guided activities: 0h 0.00%</td>
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<td></td>
<td>Self study: 90h 60.00%</td>
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<tr>
<td>Content</td>
<td>Learning time:</td>
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<tr>
<td>(ENG) Contingut 1: FONAMENT I/ O REVISIÓ DE CONCEPTES</td>
<td>15h</td>
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<tr>
<td>(ENG) Contingut 2: AMPLIFICADOR OPERACIONAL</td>
<td>15h</td>
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<tr>
<td>(ENG) Contingut 3: ELEMENTS REACTIUS PASSIUS (CONDENSADOR - INDUCTOR)</td>
<td>5h</td>
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<tr>
<td>(ENG) Contingut 4: CIRCUITS RC I RL AMB GENERADOR CONSTANT (ANÀLISI AMB EQUACIONS DIFERENCIALS)</td>
<td>15h</td>
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<tr>
<td>(ENG) Contingut 5: ANÀLISI DE CIRCUITS AMB TRANSFORMADA DE LAPLACE</td>
<td>40h</td>
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<tr>
<td>(ENG) Contingut 6: ANÀLISI EN RÈGIM PERMANENT SENOIDAL</td>
<td>20h</td>
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Planning of activities

<table>
<thead>
<tr>
<th>(ENG) ACTIVITAT 1: RESOLUCIÓ DE PROBLEMES, EN GRUP DE 2 ESTUDIANTS</th>
<th>Hours: 65h</th>
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<tbody>
<tr>
<td>Theory classes: 15h</td>
<td>Laboratory classes: 15h</td>
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<tr>
<td>Self study: 50h</td>
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<tr>
<th>(ENG) ACTIVITAT 2: PROVA ESCRITA</th>
<th>Hours: 22h</th>
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</thead>
<tbody>
<tr>
<td>Theory classes: 2h</td>
<td>Self study: 20h</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>(ENG) ACTIVITAT 3: PROVA ESCRITA</th>
<th>Hours: 22h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory classes: 2h</td>
<td>Self study: 20h</td>
</tr>
</tbody>
</table>

**Bibliography**

**Basic:**


**Complementary:**


**Others resources:**