820242 - EAVEIA - Audio and Video Electronics

Coordinating unit: 820 - EUETIB - Escola Universitària d'Enginyeria Tècnica Industrial de Barcelona
Teaching unit: 710 - EEL - Department of Electronic Engineering
Academic year: 2013
Degree: DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Optative)
DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL (Syllabus 2009). (Teaching unit Optative)
ECTS credits: 6
Teaching languages: Catalan, Spanish, English

Teaching staff
Coordinator: HERMINIO MARTINEZ GARCIA.
Others: HERMINIO MARTINEZ GARCIA y otros a determinar.

Opening hours
Timetable: To determine at the semester beginning. It will be announced to the whole students the first week of the course.

Degree competences to which the subject contributes

Specific:
1. Summarise information and undertake self-directed learning activities.
2. Design analogue, digital and power systems.
3. Understand the fundamentals and applications of analogue electronics.

General:
4. 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.
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
Please, see Spanish or Catalan version.

Learning objectives of the subject
Please, see Spanish or Catalan version.
# Study load

<table>
<thead>
<tr>
<th>Study load</th>
<th>Time</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total learning time:</strong></td>
<td>150h</td>
<td></td>
</tr>
<tr>
<td>Theory classes:</td>
<td>45h</td>
<td>30.00%</td>
</tr>
<tr>
<td>Practical classes:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Laboratory classes:</td>
<td>15h</td>
<td>10.00%</td>
</tr>
<tr>
<td>Guided study:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
</tr>
</tbody>
</table>
### 1.- Linear Regulators and Voltage References.

**Learning time**: 19h 30m  
- Theory classes: 6h 30m  
- Laboratory classes: 3h  
- Self study: 10h

### 2.- Transistors as Basic Amplifier Devices in Audio, Video and Communication Electronics.

**Learning time**: 18h  
- Theory classes: 6h  
- Laboratory classes: 2h  
- Self study: 10h

### 3.- Output Stages for Power Amplifiers in Audio, Video and Communication Electronics.

**Learning time**: 16h  
- Theory classes: 4h  
- Laboratory classes: 2h  
- Self study: 10h

### 4.- Monolithic IC Integrated Power Amplifiers.

**Learning time**: 9h 30m  
- Theory classes: 2h 30m  
- Laboratory classes: 2h  
- Self study: 5h

### 5.- Frequency Response of Amplifier Stages for Audio, Video and Communications.

**Learning time**: 15h  
- Theory classes: 3h  
- Laboratory classes: 2h  
- Self study: 10h

### 6.- Power Stages Introduction for Radiofrequency Systems.

**Learning time**: 8h  
- Theory classes: 3h  
- Self study: 5h

### 7.- Thermal Considerations in Power Semiconductor Devices.

**Learning time**: 13h  
- Theory classes: 3h  
- Self study: 10h
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<table>
<thead>
<tr>
<th>Topic</th>
<th>Learning time</th>
<th>Theory classes</th>
<th>Laboratory classes</th>
<th>Self study</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.- Technological Alternatives to the VFOA in Analog Signal Processing for Audio, Video and Communications. Other Linear Integrated Circuits.</td>
<td>17h</td>
<td>5h</td>
<td>2h</td>
<td>10h</td>
</tr>
<tr>
<td>9.- Active Continuous-Time Filtering Structures for Audio, Video and Communications.</td>
<td>18h</td>
<td>6h</td>
<td>2h</td>
<td>10h</td>
</tr>
<tr>
<td>10.- Basics of Television.</td>
<td>8h</td>
<td>3h</td>
<td></td>
<td>5h</td>
</tr>
<tr>
<td>11.- Basics of Cellular Telephony.</td>
<td>8h</td>
<td>3h</td>
<td></td>
<td>5h</td>
</tr>
</tbody>
</table>

Qualification system

Please, see Spanish or Catalan version.
Bibliography

Basic:


Complementary:


Others resources:

Hyperlink

Moodle ATENEA: http://atenea.upc.edu/moodle/