220023 - Electronic Circuits

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering
Academic year: 2018
Degree: BACHELOR’S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
BACHELOR’S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
ECTS credits: 6
Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: David González Diez,
Others: Antonio Miguel López Martínez
Sufe Socias, Víctor Manuel
Juan Antonio Gallardo

Opening hours
Timetable: By previous appointment on demand

Degree competences to which the subject contributes

Specific:
1. GrETA/GrEVA - An adequate understanding of the following, as applied to engineering: fundamental elements of the various types of aircraft; functional elements of air navigation systems and related electrical and electronic installations; the basics of the design and construction of airports and their various elements

Teaching methodology
The teaching methodology combines three activities:
· Theoretical lessons
· Laboratory practices
· Development of a project.

Learning objectives of the subject
Introduce the basic electronic components, and lay down the fundamentals of analog and digital systems. This knowledge is necessary in order to face the study of sensors and communication equipment of the airplane in posterior subjects.
## Study load

<table>
<thead>
<tr>
<th></th>
<th>Hours large group:</th>
<th>46h</th>
<th>30.67%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Hours small group:</td>
<td>14h</td>
<td>9.33%</td>
</tr>
<tr>
<td></td>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
</tr>
</tbody>
</table>
### Content

<table>
<thead>
<tr>
<th>Module</th>
<th>Description</th>
<th>Related activities</th>
<th>Specific objectives</th>
<th>Learning time</th>
<th>Theory classes:</th>
<th>Laboratory classes:</th>
<th>Self study:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MODULE 1: Basic electronic devices</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>17h</strong></td>
<td><strong>6h</strong></td>
<td><strong>1h</strong></td>
<td><strong>10h</strong></td>
</tr>
<tr>
<td><strong>MODULE 2: Operational amplifier: linear and non-linear applications.</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>27h</strong></td>
<td><strong>10h</strong></td>
<td><strong>2h</strong></td>
<td><strong>15h</strong></td>
</tr>
<tr>
<td><strong>MODULE 3: Digital electronic</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>28h</strong></td>
<td><strong>10h</strong></td>
<td><strong>3h</strong></td>
<td><strong>15h</strong></td>
</tr>
</tbody>
</table>

---

**Learning time:**

- **Theory classes:**
- **Laboratory classes:**
- **Self study:**
<table>
<thead>
<tr>
<th>MODULE 4: Introduction to microprocessor</th>
<th><strong>Learning time:</strong> 46h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 12h</td>
</tr>
<tr>
<td></td>
<td>Laboratory classes: 4h</td>
</tr>
<tr>
<td></td>
<td>Self study: 30h</td>
</tr>
</tbody>
</table>

**Description:**

**Related activities:**

**Specific objectives:**

<table>
<thead>
<tr>
<th>MODULE 5: Power electronic</th>
<th><strong>Learning time:</strong> 32h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 8h</td>
</tr>
<tr>
<td></td>
<td>Laboratory classes: 4h</td>
</tr>
<tr>
<td></td>
<td>Self study: 20h</td>
</tr>
</tbody>
</table>

**Description:**

**Related activities:**

**Specific objectives:**
# Planning of activities

| ACTIVITY 1: THEORY AND PROBLEMS | Hours: 52h  
Theory classes: 42h  
Self study: 10h |
| ACTIVITY 2: LABORATORY | Hours: 16h  
Laboratory classes: 6h  
Self study: 10h |
| ACTIVITY 3: MIDTERM EXAM | Hours: 22h  
Theory classes: 2h  
Self study: 20h |
| ACTIVITY 4: PROJECT | Hours: 33h  
Laboratory classes: 8h  
Self study: 25h |
| ACTIVITY 5: FINAL EXAM | Hours: 27h  
Theory classes: 2h  
Self study: 25h |

## Description:

## Support materials:

## Descriptions of the assignments due and their relation to the assessment:

## Specific objectives:

## Qualification system

Laboratory practices: 15%  
First exam: 35%  
Second exam: 30%  
Proposed project: 20%

In order to recover an unsatisfactory mark of the first exam, the following procedure will be used. There will be a voluntary exam of 2 points that will be scheduled with the final exam. The mark obtained in this exam will be added to that obtained in the first exam. This additional exam is open to all students in the subject. The highest mark of the subject is 10.
Bibliography

Basic:


Complementary:

