Course guide
220023 - CEL - Electronic Circuits

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering.

Degree: BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Compulsory subject).
BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Compulsory subject).

Academic year: 2022 ECTS Credits: 6.0 Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: David González Diez,
Others: Antonio Miguel López Martínez
Suñe Socias, Víctor Manuel
Juan Antonio Gallardo

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CE17-GRETA. 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
CE13-GRETA. GrETA/GrEVA - An understanding of the uniqueness of airports in terms of infrastructure, structures and operation
CE17-GREVA. (ENG) Coneixement adequat i aplicat a l'enginyeria de: els elements fonamentals dels diversos tipus d'aeronaus; els elements funcionals del sistema de navegació aèria i les instal·lacions elèctriques i electròniques associades; els fonaments del disseny i construcció d'aeroports i els seus diversos 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>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours small group</td>
<td>14,0</td>
<td>9.33</td>
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<tr>
<td>Hours large group</td>
<td>46,0</td>
<td>30.67</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
</tbody>
</table>

Total learning time: 150 h
## CONTENTS

### MODULE 1: Basic electronic devices

**Description:**

**Full-or-part-time:** 17h  
Theory classes: 6h  
Laboratory classes: 1h  
Self study: 10h

### MODULE 2: Operational amplifier: linear and non-linear applications.

**Description:**

**Specific objectives:**

**Related activities:**

**Full-or-part-time:** 27h  
Theory classes: 10h  
Practical classes: 2h  
Self study: 15h

### MODULE 3: Digital electronic

**Description:**

**Specific objectives:**

**Related activities:**

**Full-or-part-time:** 28h  
Theory classes: 10h  
Laboratory classes: 3h  
Self study: 15h

### MODULE 4: Introduction to microprocessor

**Description:**

**Specific objectives:**

**Related activities:**

**Full-or-part-time:** 46h  
Theory classes: 12h  
Laboratory classes: 4h  
Self study: 30h
MODULE 5: Power electronic

Description:

Specific objectives:

Related activities:

Full-or-part-time: 32h
Theory classes: 8h
Laboratory classes: 4h
Self study: 20h

ACTIVITIES

ACTIVITY 1: THEORY AND PROBLEMS

Full-or-part-time: 52h
Theory classes: 42h
Self study: 10h

ACTIVITY 2: LABORATORY

Full-or-part-time: 16h
Laboratory classes: 6h
Self study: 10h

ACTIVITY 3: MIDTERM EXAM

Full-or-part-time: 22h
Theory classes: 2h
Self study: 20h

ACTIVITY 4: PROJECT

Full-or-part-time: 33h
Laboratory classes: 8h
Self study: 25h
ACTIVITY 5: FINAL EXAM

Description:

Specific objectives:

Material:

Delivery:

Full-or-part-time: 27h
  Theory classes: 2h
  Self study: 25h

GRADING 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: