220053 - Avionics

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 220 - ETSEIAT - Terrassa School of Industrial and Aeronautical Engineering

Academic year: 2018
Degree: BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
ECTS credits: 4,5  
Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: Javier Gago Barrio
Others: Joan Montañá Puig

Degree competences to which the subject contributes
Specific:
1. GrETA - An adequate understanding of the following, as applied to engineering: aircraft systems and automatic flight control systems in aerospace vehicles.

Teaching methodology
The working methodology is divided into three complementary activities:
1. The theoretical lessons displayed by the teachers.
2. Problems resolution and laboratory practices.
3. Additional work proposed to develop by teams. If there is a chance, the PBL methodology will be introduced.

Learning objectives of the subject
Applying the knowledge learnt by the student about electricity and basic electronics and plane equipment. The student will be capable of designing and selection of electric and electronic circuits inside the airplanes.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 112h 30m</th>
<th>Hours large group:</th>
<th>31h</th>
<th>27.56%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>14h</td>
<td>12.44%</td>
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<tr>
<td></td>
<td>Self study:</td>
<td>67h 30m</td>
<td>60.00%</td>
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## Content

<table>
<thead>
<tr>
<th>Module 1: Electric system of the airplane</th>
<th>Learning time: 38h 30m</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 10h</td>
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<tr>
<td></td>
<td>Practical classes: 6h</td>
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<tr>
<td></td>
<td>Self study : 22h 30m</td>
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**Description:**
1. Electrical system structure
2. DC Generators
3. AC Generators

<table>
<thead>
<tr>
<th>Module 2: Instrumentation and communication systems in aircrafts</th>
<th>Learning time: 74h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 21h</td>
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<tr>
<td></td>
<td>Practical classes: 8h</td>
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<tr>
<td></td>
<td>Self study : 45h</td>
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**Description:**
1. Analog sensors
2. Digital sensors
3. Communication buses in aircrafts
4. Radiofrequency transmitters and receptors
4.
## 220053 - Avionics

### Planning of activities

| ACTIVITY 1: THEORY CLASSES | Hours: 58h 30m  
Theory classes: 28h  
Self study: 30h 30m |
|---------------------------|--------------------------|
| ACTIVITY 2: LABORATORY AND PROBLEMS CLASSES | Hours: 36h  
Practical classes: 14h  
Self study: 22h |
| Description:  
In this activity be make laboratory practical classes and problem solving classes |
| ACTIVITY 4. EXAM MODULE 1 | Hours: 6h  
Theory classes: 1h  
Self study: 5h |
| ACTIVITY 4. EXAM MODULE 2 | Hours: 12h  
Theory classes: 2h  
Self study: 10h |

### Qualification system

First module exam (25%)
Second module exam (50%)
Exercises and laboratory (25%)

The students will be able to present to the examination of recovery of the partial all the students with note inferior to 5 or those that they have not been able to realize it. This examination of recovery will be carried out in the schedule set for the final exam in the academic calendar and the mark obtained, if approved, will be a 5.

For those students who meet the requirements and submit to the reevaluation examination, the grade of the reevaluation exam will replace the grades of all the on-site written evaluation acts (tests, midterm and final exams) and the grades obtained during the course for lab practices, works, projects and presentations will be kept.

If the final grade after reevaluation is lower than 5.0, it will replace the initial one only if it is higher. If the final grade after reevaluation is greater or equal to 5.0, the final grade of the subject will be pass 5.0.
Bibliography

Basic:


Complementary:


Others resources: