

220353 - Architecture and Aircraft Systems

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:	MASTER'S DEGREE IN AERONAUTICAL ENGINEERING (Syllabus 2014). (Teaching unit Optional) MASTER'S DEGREE IN SPACE AND AERONAUTICAL ENGINEERING (Syllabus 2016). (Teaching unit Optional)		
ECTS credits:	5	Teaching languages:	English

Teaching staff

Coordinator: Carlos Esbri

Degree competences to which the subject contributes

Specific:

CEEVEHI1. MUEA/MAS: Sufficient applied knowledge of advanced, experimental and computational aerodynamics (specific competency for the specialisation in Aerospace Vehicles).

CEEVEHI2. MUEA/MAS: Sufficient applied knowledge of the aeroelasticity and structural dynamics of aircraft (specific competency for the specialisation in Aerospace Vehicles).

CEEVEHI3. MUEA/MASE: Applied knowledge of composite materials technology and a capacity for designing the basic elements of these materials (specific competency for the specialisation in Aerospace Vehicles).

Teaching methodology

The course is divided into parts:

Theory classes

Practical classes

Self-study for doing exercises and activities.

In the theory classes, teachers will introduce the theoretical basis of the concepts, methods and results and illustrate them with examples appropriate to facilitate their understanding.

In the practical classes (in the classroom), teachers guide students in applying theoretical concepts to solve problems, always using critical reasoning. We propose that students solve exercises in and outside the classroom, to promote contact and use the basic tools needed to solve problems.

Students, independently, need to work on the materials provided by teachers and the outcomes of the sessions of exercises/problems, in order to fix and assimilate the concepts.

The teachers provide the syllabus and monitoring of activities (by ATENEA).

Learning objectives of the subject

To know the different systems that integrate an aeroplane, his architecture and operation.

To understand the structural design of an aeroplane.



220353 - Architecture and Aircraft Systems

Study load

Total learning time: 125h	Hours large group:	30h	24.00%
	Hours small group:	15h	12.00%
	Self study:	80h	64.00%

220353 - Architecture and Aircraft Systems

Content

<p>Module 1: Power Systems</p>	<p>Learning time: 37h Theory classes: 12h Self study : 25h</p>
<p>Description:</p> <ul style="list-style-type: none"> - Hydraulic - Pneumatic - Electrical <p>Related activities:</p> <ul style="list-style-type: none"> - Activity 1: Classes of theory - Activity 2: Partial examination 	
<p>Module 2: Representative Systems</p>	<p>Learning time: 38h Theory classes: 13h Self study : 25h</p>
<p>Description:</p> <ul style="list-style-type: none"> - Flight control - Air conditioning - Fuel <p>Related activities:</p> <ul style="list-style-type: none"> - Activity 1: Classes of theory - Activity 3: final examination 	

220353 - Architecture and Aircraft Systems

Module 3: Structure	Learning time: 20h Theory classes: 5h Self study : 15h
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Description:

- Introduction to aircraft structure:
- Fuselage
- Wings
- Pylons
- Doors

Related activities:

- Activity 1: Classes of theory
- Activity 3: Final examination

Module 4: Development work	Learning time: 30h Practical classes: 15h Self study : 15h
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Description:

- Work to develop a system to be exposed

Related activities:

- Activity 4: Oral exposition

Qualification system

$$NF = 0,40 EP + 0,40 EF + 0,20 TD$$

NF : Final score

EP : Partial examination

EF : Final examination

TD : Development work

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