

220146 - Uav Research & Development Project

Coordinating unit:	205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit:	732 - OE - Department of Management
Academic year:	2019
Degree:	BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN TEXTILE TECHNOLOGY AND DESIGN ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Teaching unit Optional)
ECTS credits:	3
Teaching languages:	English

Teaching staff

Coordinator: Oriol Lordan

Teaching methodology

The course is divided into four parts:

- *Theory sessions
- *Activity sessions
- *Project sessions
- *Self-study

In the theory sessions (in the classroom), lecturers will introduce the theoretical basis of the concepts and methods behind UAVs and illustrate them with examples appropriate to facilitate their understanding.

In the activity sessions (in the classroom), lecturers will guide students in applying theoretical concepts to develop R&D UAV projects based on quadcopters.

In the project sessions (in the classroom), students will apply the theoretical concepts to the project.

The course is hands on orientated through the activity and project sessions.

Students, independently, will need to work on the materials provided by lecturers in order to develop the project. The lecturers provide the syllabus and monitoring of activities (by ATENEA).

Learning objectives of the subject

The main objective of the course is to understand the needs of the UAVs industry. In order to do so students will develop a R&D UAV project such as implementing a parachute for 1kg quadcopter, develop a system to record in 360° or 3D with a UAV or a suitable idea that the student wants to develop. This project integrates knowledge of multiple areas of engineering with a hands on approach. This course can be complemented with the Bachelor's Thesis.

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Study load

Total learning time: 75h	Hours large group:	30h	40.00%
	Self study:	45h	60.00%

Content

Module 1: UAV Basics	Learning time: 35h Theory classes: 15h Self study : 20h
<p>Description: Introduction to UAVs and how they work</p> <p>Related activities: Activity 1 Activity 2</p>	
Module 2: Using and improving UAVs	Learning time: 40h Theory classes: 15h Self study : 25h
<p>Description: Design and develop an R&D project using or improving a UAV</p> <p>Related activities: Activity 3 Activity 4</p>	

Qualification system

The final grade depends on the following assessment criteria:

- Activity 1, weight: 25 %
- Activity 2, weight: 25 %
- Activity 3, weight: 25 %
- Activity 4, weight: 25 %

As there are no written tests, there won't be any exam to retake.

Bibliography