

Course guide

220145 - UAVF - Uav Fundamentals & Operations

Last modified: 11/04/2025

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 758 - EPC - Department of Project and Construction Engineering.

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

Academic year: 2025 **ECTS Credits:** 3.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: XAVIER ROCA RAMON

Others: Segon quadrimestre:
JOSEP BRUGUERA ARNES - 1

TEACHING METHODOLOGY

The course is developed on one side through lectures including theoretical sessions imparted with the aid of presentations and videos, and on the other side through dynamic workshops, oral expositions and discussions

LEARNING OBJECTIVES OF THE SUBJECT

The main objective of this course is to provide students with a thorough understanding of the Unmanned Aerial Vehicle (UAV/RPAS) industry. Students will learn the basics about UAV/RPAS regulations, operations and business.

The course supports the student to take the official AESA DISTANCE PILOT EXAMINATION IN OPEN CATEGORY, SUBCATEGORIES A1/A3. The official AESA exam will be held during school hours.

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	40.00
Self study	45,0	60.00

Total learning time: 75 h

CONTENTS

UAV FUNDAMENTALS AND OPERATIONS

Description:

- 1.- Theoretical training activity:
 - ☐ Regulatory concept.
 - ☐ General knowledge of the aircraft.
 - ☐ Operational procedures.
- 2.- Flight practice.
- 3.- Examination
- 4.- Work on a topic to choose from.

Full-or-part-time: 20h

Theory classes: 10h

Self study : 10h

Module 2: Unmanned Aircraft System

Description:

- Analysis of the UAV as a system that includes the aerial platform (the aircraft itself) but also the C3 systems, the ground station and the support equipment.

Related activities:

Activity 2 - Aircraft type models

Activity 3 - Aircraft system description

Full-or-part-time: 40h

Theory classes: 15h

Self study : 25h

Module 3: Unmanned Aircraft Business

Description:

- The UAV is just a vehicle to carry a payload, while the final applications related to this payload is the real business associated to this technology.

Related activities:

Activity 4 - Payload and applications

Full-or-part-time: 15h

Theory classes: 5h

Self study : 10h

GRADING SYSTEM

The final grade depends on the following evaluation criteria:

- Exam: 50%
- Flight practice: 10%
- Work: 40%



BIBLIOGRAPHY

Basic:

- European RPAS regulations.
- Circular 328, Sistemas de aeronaves no tripuladas (UAS) [on line]. Montréal: Organización de Aviación Civil Internacional, 2011 [Consultation: 12/04/2022]. Available on: http://www.icao.int/Meetings/UAS/Documents/Circular%20328_es.pdf. ISBN 9789292318093.

RESOURCES

Other resources:

UAVs manufacturer websites
UAVs operators websites