Course guide
205281 - UAVIVD - UAV Introduction to Drone Flight (Uas)

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 AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN TEXTILE TECHNOLOGY AND DESIGN ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).

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

LECTURER

Coordinating lecturer: Josep Bruguera Arnés.

Others: Josep Bruguera Arnés.
Aquesta assignatura té algunes classes en català i castellà. Consultar l'idioma concret de cada classe/grup als horaris. L'idioma principal de les classes serà Català i la teoria es presenta en castellà, atès que es tracta de documentació oficial.
Esta asignatura tiene algunas clases en catalán i castellano. Consultar el idioma concreto de cada clase/grupo en horarios. El idioma principal de las clases será Catalán y la teoría se presenta en español, debido a que se trata de documentación oficial.
This subject has some classes in Catalan and Spanish. Please consult the specific language of each class/group in the timetable. The main language of the classes will be Catalan and the theory will be presented in Spanish, , as it is official documentation..

PRIOR SKILLS

No prior skills are required.

TEACHING METHODOLOGY

The sessions will be divided between theoretical classes (Monday from 15h to 17h) and practical work (Thursday from 15h to 18h). Active learning will be encouraged to prepare students for real drone operation scenarios, including simulators. The methodology will allow the student to access the official AESA exam and take the certification tests in the open subcategory A1/A3.

LEARNING OBJECTIVES OF THE SUBJECT

- Know the air regulations applicable to drones (in accordance with local and international regulations).
- Describe and analyze the different types of unmanned aerial vehicles (UAVs) and their technical characteristics.
- Evaluate standard operating procedures for the use of drones in diverse environments.
- Manage operational risks in drone missions according to safety criteria.
- Obtain accreditation to pilot in open category A1/A3 approved by AESA through an online exam.

STUDY LOAD

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

Total learning time: 75 h

CONTENTS

Regulations of drones

Description:
- Classification of drones according to regulations.
- Legal requirements for drone operation.
- Airspace regulation and permits for use.

Specific objectives:
To acquire the necessary knowledge of the current rules and regulations in order to operate drones safely, legally and efficiently, both recreationally and professionally, complying with the requirements established by the competent authorities and guaranteeing air and personal safety.

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

Characterisation of unmanned aircraft

Description:
- Main components of drones.
- Types of drones: multirotors, aircraft, fixed-wing, hybrids.
- Propulsion, control and communication systems.

Specific objectives:
Know and analyse the technical, functional and structural characteristics of unmanned aircraft in order to identify the different types of drones, their specific applications and the essential components that determine their performance, stability and functionality in various operating conditions.

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

Operational procedures

Description:
- Drone mission planning.
- Payload management (cameras, sensors, other devices).
- Safety and emergency management procedures.

Specific objectives:
Know the operational procedures necessary to plan, execute and supervise drone operations, ensuring compliance with current regulations, the safety of airspace and the protection of people and property, as well as optimising the efficiency and effectiveness of the missions according to the established objective.

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

GRADING SYSTEM

50% of the final mark will be a multiple-choice exam, 40% will be practical work and 10% will be a presentation. For students who have failed the exam, there will be an exam for retaking the exam on the day set in the academic calendar for the retaking of the bimestrial elective subjects. The mark will be from 0 to 5 and the mark of this revision exam will only replace the mark of the multiple-choice exam if it is higher.

BIBLIOGRAPHY

Basic:
- Nou llibre.

RESOURCES

Audiovisual material:
- ATENEA. Resource