

Guia docent

220065 - 220065 - Introducció als Planadors

Última modificació: 29/05/2020

Unitat responsable: Escola Superior d'Enginyeries Industrial, Aeroespacial i Audiovisual de Terrassa
Unitat que imparteix: 737 - RMEE - Departament de Resistència de Materials i Estructures a l'Enginyeria.

Titulació: GRAU EN ENGINYERIA EN TECNOLOGIES INDUSTRIALS (Pla 2010). (Assignatura optativa).
GRAU EN ENGINYERIA EN TECNOLOGIES AEROESPACIALS (Pla 2010). (Assignatura optativa).
GRAU EN ENGINYERIA EN VEHICLES AEROESPACIALS (Pla 2010). (Assignatura optativa).

Curs: 2020 **Crèdits ECTS:** 3.0 **Idiomes:** Anglès

PROFESSORAT

Professorat responsable: Rafael Weyler Pérez

Altres: Rafael Weyler Pérez

COMPETÈNCIES DE LA TITULACIÓ A LES QUALS CONTRIBUEIX L'ASSIGNATURA

Específiques:

3. GrETA/GrEVA - Comprendre com les forces aerodinàmiques determinen la dinàmica del vol i el paper de les distintes variables involucrades en el fenomen del vol.
1. GrEVA - Coneixement adequat i aplicat a l'enginyeria de: fenòmens físics del vol, les seves qualitats i control, les forces aerodinàmiques, i propulsives, les actuacions i l'estabilitat.
4. GrETA/GrEVA - Comprendre la singularitat de les infraestructures, edificacions i funcionament dels aeroports
2. GrEVA - Coneixement aplicat de: aerodinàmica, mecànica i termodinàmica, mecànica del vol, enginyeria d'aeronaus (ala fixa i ales rotatòries), teoria d'estructures.

METODOLOGIES DOCENTS

The course is divided into parts:

Theory classes

Theory classes will prepare the student for a better understanding of the practical activities. In the theory classes, teachers will introduce the theoretical basis of the concepts related to sailplane usage from a practical point of view. The explanations will cover from theoretical flight conditions to some practical situations in which a pilot might become involved.

Practical classes

In the practical classes, the student will experience some of the theoretical concepts. They will come into contact with real sailplanes and will carry out some flights. Some of the practical classes will be made on the aerodrome.

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

IMPORTANT: Students must pay an extra payment for the flights (fuel and sailplane rent). As a guide, the price will be around 150 €, but this quantity is subject to change.

OBJECTIUS D'APRENTATGE DE L'ASSIGNATURA

This course is intended to introduce students into the engineering applications from the user point of view and not as an engineer, who does not necessarily have such training. This course will focus on a highly technical and specialized flight discipline such as gliding, in which almost everything is related to engineering. It is proposed to show the importance of proper communication, as well as how technical concepts must be properly summarized and transmitted in accordance with the purpose of the device designed. It is also of vital importance and at the same time is overlooked, the role of engineers have into the specification of user skills or the training they should receive in order to manage properly the designed devices. On the other hand, the knowledge of user's needs is of vital importance to make a good design. Understanding requirements, limitations and functionality are basic elements needed to design an aircraft.

The course will pay special attention on all these concepts. It will be organized into theoretical lectures and practical classes. The first one will explain basic concepts and how the glider or some of its components works. Practical classes are done in order to understand the importance of these concepts. In this classes the students will interact with the sailplane itself, including the basic flight experience.

HORES TOTS DE DEDICACIÓ DE L'ESTUDIANTAT

Tipus	Hores	Percentatge
Hores grup gran	30,0	40.00
Hores aprenentatge autònom	45,0	60.00

Dedicació total: 75 h

CONTINGUTS

(CAT) -Module 1: Theoretical aspects

Descripció:

- (CAT) - Introduction to gliding
- Basic knowledge of sailplanes
 - Principles of flight
 - Meteorology
 - Flight techniques
 - Special issues

Activitats vinculades:

- (CAT) - Theoretical sessions
- Activity 1

Dedicació: 45 h

Grup gran/Teoria: 20h

Aprenentatge autònom: 25h



(CAT) Module 2: Applied activities

Descripció:

- (CAT) - Procedures
- Handle the sailplanes
 - The flight on sailplanes

Activitats vinculades:

- (CAT) - Theoretical sessions
- Practical sessions
 - Activity 2

Dedicació: 30 h

Grup gran/Teoria: 10h

Aprenentatge autònom: 20h

SISTEMA DE QUALIFICACIÓ

BIBLIOGRAFIA

Complementària:

- Pajno, Vittorio. Sailplane design: a guide for students and designers: from drafting to flight test. Roma: IBN, 2014. ISBN 9788875650926.
- Reichmann, Helmut. Cross-country soaring: a handbook for performance and competition soaring. Santa Mónica: Thomson, 1978.