

220065 - Introducció als Planadors

Unitat responsable:	205 - ESEIAAT - 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		
Curs:	2019		
Titulació:	GRAU EN ENGINYERIA EN VEHICLES AEROESPACIALS (Pla 2010). (Unitat docent Optativa) GRAU EN ENGINYERIA EN TECNOLOGIES AEROESPACIALS (Pla 2010). (Unitat docent Optativa) GRAU EN ENGINYERIA EN TECNOLOGIES INDUSTRIALS (Pla 2010). (Unitat docent Optativa)		
Crèdits ECTS:	3	Idiomes docència:	Anglès

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'aprenentatge de l'assignatura

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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 totals de dedicació de l'estudiantat

Dedicació total: 75h	Hores grup gran:	30h	40.00%
	Hores aprenentatge autònom:	45h	60.00%

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Continguts

<p>(CAT) -Module 1: Theoretical aspects</p>	<p>Dedicació: 45h Grup gran/Teoria: 20h Aprentatge autònom: 25h</p>
<p>Descripció: (CAT) - Introduction to gliding - Basic knowledge of sailplanes - Principles of flight - Meteorology - Flight techniques - Special issues</p> <p>Activitats vinculades: (CAT) - Theoretical sessions - Activity 1</p>	
<p>(CAT) Module 2: Applied activities</p>	<p>Dedicació: 30h Grup gran/Teoria: 10h Aprentatge autònom: 20h</p>
<p>Descripció: (CAT) - Procedures - Handle the sailplanes - The flight on sailplanes</p> <p>Activitats vinculades: (CAT) - Theoretical sessions - Practical sessions - Activity 2</p>	

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.