

220054 - Airport Engineering

Coordinating unit:	205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering		
Teaching unit:	758 - EPC - Department of Project and Construction Engineering		
Academic year:	2019		
Degree:	BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)		
ECTS credits:	7,5	Teaching languages:	Catalan, Spanish

Teaching staff

Coordinator:	XAVIER ROCA RAMON
Others:	AITOR MARTIN SIERRA RUBEN MARTINEZ SEVILLANO JOSEP BRUGUERA ARNES

Degree competences to which the subject contributes

Specific:

1. GrETA/GrEVA - An understanding of the uniqueness of airports in terms of infrastructure, structures and operation
2. GrETA - An understanding of the development of airport infrastructure and its environmental impact; the buildings necessary for the operation and functioning of airports.

Transversal:

3. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.

Teaching methodology

- Face to face sessions for content exposition.
- Autonomous work together with guidance during practical sessions.
- Group work to carry out a project.

During face to face sessions, the lecturer will expose the theoretical basis, concepts, methods and results together with examples to facilitate its comprehension.

During practical sessions, the lecturer will provide guidance in the practical exercises promoting and encouraging on critical thinking, scientific reasoning and problem solving skills. Case studies to be solved during practical sessions will be proposed.

Students will be required to carry out a preliminary project of an aerodrome related to those contents learnt during face to face sessions and during practical sessions. This preliminary project will be exposed by each group of students and will be evaluated by the subject lecturers.

Students should learn autonomously the theoretical and conceptual contents and solve the proposed exercises.

The sources to be used in this subject are face to face expositions using power point presentations and the active intervention of students.

Learning objectives of the subject

This subjects aims to give an overview of the conception, design and operation of the airport systems and other related systems.



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Study load

Total learning time: 187h 30m	Hours large group:	45h	24.00%
	Hours small group:	30h	16.00%
	Self study:	112h 30m	60.00%

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Content

<p>Module 1. Introduction and general concepts</p>	<p>Learning time: 50h Theory classes: 12h Laboratory classes: 8h Self study : 30h</p>
<p>Description: Lesson 1 Airport infrastructure system Lesson 2 Types of airports / Aircraft characteristics Lesson 3 Airport Master Plan Lesson 4 Environmental assessment Lesson 5 Traffic forecast</p> <p>Related activities: Theoretical sessions Activity: traffic forecast Final exam Project</p>	
<p>Module 2. Planning and design of the "air side"</p>	<p>Learning time: 102h 30m Theory classes: 25h Laboratory classes: 16h Self study : 61h 30m</p>
<p>Description: Lesson 6 Meteorology and runway orientation Lesson 7 Movement area capacity Lesson 8 Runways dimensioning Lesson 9 Design of the "airside"</p> <p>Related activities: Theoretical sessions Activity: Runways dimensioning Final exam Project</p>	

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<p>Module 3. Terminal building planning and design</p>	<p>Learning time: 35h Theory classes: 8h Laboratory classes: 6h Self study : 21h</p>
<p>Description: Lesson 10 Terminal buildings characteristics and types Lesson 11 Study of passenger flows Lesson 12 Heliports Lesson 13 Other airport facilities</p> <p>Related activities: Theoretical sessions Activity: Study of passenger flows Final exam Project</p>	

Qualification system

$$N_f = 0,50 \cdot N_{ef} + 0,35 \cdot N_{tp1} + 0,15 \cdot N_{tp2}$$

N_f : Final mark

N_{ef} : Final exam mark

N_{tp1} : Practical work 1 mark - Preliminary Project (group)

N_{tp2} : Practical work 2 mark - Preliminary Project presentation

Regulations for carrying out activities

To elaborate the aerodrome preliminary project students will have to join in groups of 4/5. The lecturer will assign a type of aerodrome (commercial, cargo airport, heliport, etc.) to each group.

The preliminary project will be handed over the last week of class and will consist on a PowerPoint presentation to be presented by all the members of the group. After the presentation, the rest of students and the evaluators will be able to ask questions. All members of the group should be able to answer whatever question.

The content and the presentation will be evaluated separately.

The generic competence assigned to this subject (Self-directed learning) will be evaluated during all practical sessions when developing the preliminary project.

The final exam is individual.

Bibliography