300252 - GMA-MP8 - Airport Maintenance and Management

Coordinating unit: 300 - EETAC - Castelldefels School of Telecommunications and Aerospace Engineering

Teaching unit:

Academic year: 2018

Degree: BACHELOR'S DEGREE IN AEROSPACE SYSTEMS ENGINEERING (Syllabus 2015). (Teaching unit Optional)

BACHELOR'S DEGREE IN AEROSPACE SYSTEMS ENGINEERING/BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2015). (Teaching unit Optional)

BACHELOR'S DEGREE IN AEROSPACE SYSTEMS ENGINEERING/BACHELOR'S DEGREE IN NETWORK ENGINEERING (Syllabus 2015). (Teaching unit Optional)

ECTS credits: 6  Teaching languages: Spanish

Teaching staff

Coordinator:  Definit a la infoweb de l'assignatura.

Others:  Definit a la infoweb de l'assignatura.

Opening hours

Timetable: Consultations by appointment. Opening hours: 1 hour before the start of the class.

Prior skills

Basic knowledge about:
- airport engineering (design and construction of airports).
- airport buildings (terminals, parking, tower, hangar...).
- geotechnics
- Planning and processes at the airport
- Managerial economics, micro and macroeconomics.
- International agreements in commercial aviation.
- Material of construction, concrete, cement, pavements, installation of communication, electrical installation at the airport.

It is recommended that you have passed these courses:
- Airport engineering (EA).
- Electrical Installations (FIX).
- Planning and processes at airports (PPA).
- Airport buildings (EA).

Requirements

This courses have passed:
- Installations of communication (FIX).
- Geotechnics (G).

Degree competences to which the subject contributes

Basic:
CB3. (ENG) CB3 - Que los estudiantes tengan la capacidad de reunir e interpretar datos relevantes (normalmente dentro de su área de estudio)
At the end of this course, the student has to be able to:

- Analyze the airport system with transport system approach: supply - demand interaction.
- Analyze the airport system with business approach: marketing, operation, economic-finance and organization.
- Design and implement the strategy. Strategic Maps and Balance Score Card.
- Analyze the airport with the approach of sustainability: economic, social and environment. Fundamentals of ethics in transport infrastructures management.
- Identify the specific normative for edification, procedures of maintenance and conservation of infrastructures.
- Know and apply the inspection techniques, quality control and fail detection, safety and controlling plans at airports.
### Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group:</th>
<th>60h</th>
<th>40.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guided activities:</td>
<td>6h</td>
<td></td>
<td>4.00%</td>
</tr>
<tr>
<td>Self study:</td>
<td>84h</td>
<td></td>
<td>56.00%</td>
</tr>
</tbody>
</table>
### Content

**Airport Management**

**Learning time:** 75h
- Theory classes: 30h
- Guided activities: 3h
- Self study: 42h

**Description:**
Airport management in terms of transport infrastructure oriented to the service and business operation.

U01. Introduction to airport management.
U03. Marketing perspective: the airport as a service, positioning and market development company.
U04. Perspective of operations at the airport. Processes and operational decisions.
U05 Competitiveness in airports. Introduction to regulation, game theory, principal-agent, public-private participation.
U06. Airport pricing.
U07. Perspective of organization. Structure and functions.
U08. Social responsibility of the airport.
U09. Geostrategic perspective. The airport in the global context.
U10. Digitization of the airport. Smart Airport and business intelligence.
U11. Airport, system and network. Multiairport systems.

**Related activities:**
The operation of this block of the subject will be based on master classes by the teacher with a lot of student participation.
To do this, a few readings will be provided and a masterly presentation of a topic will be made, to end with a participatory work in the class that integrates the concepts learned.

This block involves the realization of two evaluable activities, based on practical group work (case study version). Each job involves the delivery of a report and a brief presentation in the class.

As a guide:
1. The handling concession.
2. Aena as airport manager.
3. The management model of Canadian airports.
4. Airports in London. Between the BAA and the CAA.

**Specific objectives:**
- Analyze an airport system from a transport system approach: supply and demand reserve.
- Analyze an airport system from a business approach: marketing, operation, economic-financial and organization.
- Strategy design and implementation. Strategic maps and scorecards.
- Analyze the airport in terms of sustainability: economic, social and environmental. Fundamentals of ethics and engineering.
Maintenance of the airport

**Learning time:** 75h
- **Theory classes:** 30h
- **Guided activities:** 3h
- **Self study:** 42h

**Description:**
This block is focused on studying the maintenance and conservation of airport infrastructure. To do this, three work units are proposed:

**U01. Structures at the airport:** structural typology and functional design program of the structure. Maintenance and conservation of the structure. Structural pathologies.

**U02. Airport signs:** types of signs and use. Conservation and maintenance of the firm. Pathologies in the roadways in airports.

**U03. Land:** conservation during the exploitation of the infrastructure (water table, underground hydrology, settlements, consolidation, etc.). Measurements in the field (both of the mentioned phenomena and of the topography of the terrain -basic concept-).

**Related activities:**
The operation of this block of the subject will be based on master classes by the teacher, which will assess the active participation of students.

For this, previous material will be provided and a masterful presentation of a topic will be made during the session.

**Specific objectives:**
- Identify the specific building regulations, maintenance procedures and infrastructure conservation.
- Know and apply inspection techniques, quality control and fault detection, security and control plans at airports.

---

**Qualification system**
Defined in the course webpage at the EETAC website.

**Bibliography**

**Basic:**