



IDENTIFYING DATA

Air transport and airborne systems

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|---------------------|---|-----------|------|------------|
| Subject | Air transport and airborne systems | | | |
| Code | 007G410V01404 | | | |
| Study programme | Grado en Ingeniería Aeroespacial | | | |
| Descriptors | ECTS Credits | Choose | Year | Quadmester |
| | 6 | Mandatory | 2nd | 2nd |
| Teaching language | #EnglishFriendly Spanish | | | |
| Department | | | | |
| Coordinator | Orgeira Crespo, Pedro | | | |
| Lecturers | Orgeira Crespo, Pedro | | | |
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| Web | http://aero.uvigo.es | | | |
| General description | The subject is divided in two main areas. First, civil aerial transport fundamentals are introduced, as well as the regulatory laws, the elements that constitute it, and its interactions. Second, airborne systems are described. English Friendly subject: International students may request from the teachers: a) materials and bibliographic references in English, b) tutoring sessions in English, c) exams and assessments in English. | | | |

Training and Learning Results

| | | | |
|------|---|--|--|
| Code | | | |
| B1 | Capability for design, development and management in the field of aeronautical engineering (in according with what is established in section 5 of order CIN / 308/2009), aerospace vehicles, aerospace propulsion systems, aerospace materials, airport infrastructures, air navigation infrastructures and space management, air traffic and transport management systems. | | |
| B7 | Capability to analyze and assess the social and environmental impact of technical solutions. | | |
| C14 | Understand the air transport system and the coordination with other transport modes. | | |
| C19 | Applied knowledge of: science and technology of materials; mechanics and thermodynamics; fluid mechanics; aerodynamics and flight mechanics; navigation and air traffic systems; aerospace technology; theory of structures; airborne transportation; economy and production; projects; environmental impact. | | |
| C21 | Appropriate knowledge applied to engineering: foundations of sustainability, maintenance and operation of aerospace vehicles. | | |
| D1 | Capability of analysis, organization and planification. | | |
| D2 | Leadership, initiative and entrepreneurship | | |
| D3 | Capability of oral and written communication in native language | | |
| D4 | Capability of autonomous learning and information management | | |
| D5 | Capability to solve problems and draw decisions | | |
| D6 | Capability for interpersonal communication | | |
| D8 | Capability for critical and self-critical reasoning | | |
| D13 | Sustainability and environmental commitment. Equitable, responsible and efficient use of resources | | |

Expected results from this subject

| Expected results from this subject | Training and Learning Results | | |
|---|-------------------------------|----------------|-----------------------------------|
| Knowledge of the structure and the elements that conform the current system of world-wide transport. | C14 | D1 D5 D8 | |
| Understanding of the legal characteristics of the aerial transport and knowledge of this transport mode law | B1 B7 | C14 C21 | D1 D2 D3 D4 D8 D13 |

| | | | |
|---|----------|-------------------|---|
| Knowledge of the different elements that integrate the system of transports: aerial companies, manufacturing, airports, aerial navigation suppliers | B1 B7 | C14 C19 | D1 D2 D4 D6 D8 D13 |
| Comprise the most important aspects of the situation of the aerial transport in the actuality, so much in Spain how in the rest of the world | B1 B7 | C14 C19 C21 | D1 D2 D3 D4 D6 D8 D13 |
| Knowledge of the different systems and subsystems onboarded in aerospace vehicles | B1 B7 | C14 C19 C21 | D1 D3 D4 D8 D13 |
| Knowledge of the way in which the aerial way inserts in the system of transport and the distinct forms of cooperation and intermodal competition | B1 | C14 | |

Contents

| Topic | |
|------------------|---|
| Aerial transport | Structure and elements that constitute current world-wide transport system. Insertion of the aerial mode in the transport system and the different ways of cooperation and intermodal competition. Economic and social benefits of the aerial transport. Legal frame of the aerial transport and international law system. Elements that constitute the system of transportation: aerial companies, manufacturing, airports, aerial navigation suppliers. Situation of the aerial transport nowadays, in Spain and in the rest of the world. |
| Onboard systems | Introduction to flight systems Engine and fuel Systems Hydraulic System Electrical System Pneumatic System Air conditioning Systems Navigation Systems Positioning Systems |

Planning

| | Class hours | Hours outside the classroom | Total hours |
|---|-------------|-----------------------------|-------------|
| Lecturing | 33.5 | 68.5 | 102 |
| Laboratory practical | 12 | 14.5 | 26.5 |
| Report of practices, practicum and external practices 1 | | 7.5 | 8.5 |
| Objective questions exam | 2.5 | 0 | 2.5 |
| Objective questions exam | 2.5 | 0 | 2.5 |
| Report of practices, practicum and external practices 1 | | 7 | 8 |

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

| | Description |
|----------------------|--|
| Lecturing | The teacher will expose the theoretical bases of the subject. The students will have basic reference texts |
| Laboratory practical | IT and laboratory solutions will be used to solve problems and exercises and apply the knowledge achieved. |

Personalized assistance

| Methodologies | Description |
|---------------|--|
| Lecturing | The teacher will attend personally the doubts and queries of the students, in person, or by telematic support. |

Laboratory practical The teacher will attend personally the doubts and queries of the students, in person, or by telematic support.

| Assessment | | | | | | |
|---|--|---------------|-------------------------------|-------------------|---|--|
| | Description | Qualification | Training and Learning Results | | | |
| Report of practices, practicum and external practices | Report covering all requirements given | 18 | B1 B7 | C14 C19 C21 | D1 D2 D3 D4 D5 D6 D8 D13 | |
| Objective questions exam | Test or question's evaluation exam. | 40 | B1 B7 | C14 C19 C21 | D3 D8 | |
| Objective questions exam | Test or question's evaluation exam. | 30 | B1 B7 | C14 C19 C21 | D3 D8 | |
| Report of practices, practicum and external practices | Report covering all requirements given | 12 | B1 B7 | C14 C19 C21 | D1 D2 D3 D4 D5 D6 D8 D13 | |

Other comments on the Evaluation

By default, the evaluation is assumed to be continuous. The student has the right to opt for the global evaluation according to the procedure and deadline established by the center for each call.

- Continuous evaluation:

- At the first opportunity:

- There will be a partial, liberating and retrievable exam during the course, with part of the contents of the subject. To pass said written test and release that part of the subject, it is necessary to obtain a grade of 5 out of 10; this part can be released if the grade exceeds 4 out of 10, and if the rest of the parts compensate the grade to exceed a final grade of 5 out of 10. The weight of this test in the final grade for this case is 30% .

- A final exam will be held on the official date indicated by the center. Said written test will consist of two parts: a first for students who have passed the partial exam, and with a weight of 40% in the final grade; a second part, for students who have not passed the partial exam (with its weight, of 30%)

- Two qualifying internships will be delivered within the regular internship schedule, with a weight of 30% in the final grade: a first, with a partial weight of 40%, and a second, with a partial weight of 60%.

- The minimum grade to be achieved in any test will be 4 out of 10 to be able to balance the exam and practicals. To pass the subject, you must pass a weighted grade (written exams, possible work, internships), of 5 out of 10, and it is also required to have attended at least 90% of the internships. The written tests may consist of test-type questions and/or short questions and/or development questions.

- In the second opportunity:

- Students who have not passed the subject at the first opportunity will take an exam that will cover all aspects of the subject.

- To pass the subject you must pass 5 out of 10. The exam may consist of test-type questions and/or short questions and/or development questions.

- Global evaluation / End of career:

- At the first opportunity:
- A final exam will be held on the official date indicated by the center, which will cover all aspects of the subject.
- To pass the subject you must pass 5 out of 10. The exam may consist of test-type questions and/or short questions and/or development questions.
- In the second opportunity:
 - The conditions are the same as in the case of continuous evaluation.

In case of detection of plagiarism in any qualification item, the qualification in said item will be 0 and the fact will be communicated to the Center's management for the appropriate effect.

Sources of information

Basic Bibliography

Ian Moir & Allan Seabridge, **Aircraft systems**, Wiley,
 Mike Tooley, **Aircraft digital electronic and computer systems**, Routledge,
 Luis Utrilla Navarro, **Descubrir el transporte aéreo**, Aena Aeropuertos SA,
 Arturo Benito, **Descubrir el transporte aéreo y el medio ambiente**, AENA,

Complementary Bibliography

L. Tapia, **Derecho aeronáutico**, Bosch,
 A. Benito, **Descubrir las líneas aéreas**, AENA,

Recommendations

Subjects that it is recommended to have taken before

Aerospace technology/O07G410V01205
