

300319 - DITESA - Design and Test of Aeronautical and Aerospace Systems

Coordinating unit:	300 - EETAC - Castelldefels School of Telecommunications and Aerospace Engineering
Teaching unit:	710 - EEL - Department of Electronic Engineering
Academic year:	2013
Degree:	BACHELOR'S DEGREE IN AIR NAVIGATION ENGINEERING (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN AIRPORT ENGINEERING (Syllabus 2010). (Teaching unit Optional)
ECTS credits:	6
Teaching languages:	Catalan, Spanish

Teaching staff

Coordinator: Definit a la infoweb de l'assignatura.

Others: Definit a la infoweb de l'assignatura.

Degree competences to which the subject contributes

Specific:

1. CE 17 AERO. Conocimiento adecuado y aplicado a la ingeniería de: Los elementos fundamentales de los diversos tipos de aeronaves ; los elementos funcionales del sistema de navegación aérea y las instalaciones eléctricas y electrónicas asociadas; los fundamentos del diseño y construcción de aeropuertos y sus diversos elementos. (CIN/308/2009, BOE 18.2.2009)
2. CE 21 AERON. Conocimiento adecuado y aplicado a la Ingeniería de: Las instalaciones eléctricas y electrónicas. (CIN/308/2009, BOE 18.2.2009)
3. CE 22 AEROP. Conocimiento adecuado y aplicado a la Ingeniería de: Los métodos de cálculo y de desarrollo de las diferentes soluciones de edificación y pavimentación de aeropuertos; el cálculo de los sistemas específicos de los aeropuertos y sus infraestructuras; la evaluación de las actuaciones técnicas y económicas de las aeronaves; el manejo de las técnicas experimentales, equipamiento e instrumentos de medida propios de la disciplina; las técnicas de inspección, de control de calidad y de detección de fallos; los planes de seguridad y control en aeropuertos. (CIN/308/2009, BOE 18.2.2009)

Generical:

6. PROJECT MANAGEMENT - Level 2: Define the objectives of a well-defined, narrow scope, and plan development, identifying resources, tasks, shared responsibilities and integration. Use appropriate tools to support project management.
7. EFFICIENT USE OF EQUIPMENT AND INSTRUMENTATION - Level 3: Design experiments, measurements, subsystems and systems, equipment and tools most appropriate laboratory. Knowing not only benefits but also the limitations of the equipment and resources. Conduct assessments and evaluations critically, making decisions according to the overall system specifications or service.

Transversal:

4. 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.
5. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
8. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

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Learning objectives of the subject

Study load

Total learning time: 150h	Hours large group:	39h	26.00%
	Hours small group:	26h	17.33%
	Guided activities:	1h	0.67%
	Self study:	84h	56.00%

Content

(ENG) INTRODUCCIÓ PROJECTES	Learning time: 21h Theory classes: 10h Guided activities: 1h Self study : 10h
(ENG) DISSENY HARDWARE	Learning time: 43h Theory classes: 15h Self study : 28h
(ENG) DISSENY SOFTWARE	Learning time: 19h Theory classes: 9h Self study : 10h
(ENG) ARQUITECTURES SISTEMES DE TEST	Learning time: 15h Theory classes: 5h Self study : 10h
(ENG) PROJECTE	Learning time: 52h Laboratory classes: 26h Self study : 26h

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Planning of activities

(ENG) CONTROLS INDIVIDUALS DE CONEIXEMENTS BÀSICS	Hours: 16h Theory classes: 4h Self study: 12h
(ENG) PROBLEMES	Hours: 30h Theory classes: 14h Self study: 16h
(ENG) PROJECTE D'APLICACIÓ	Hours: 52h Laboratory classes: 26h Self study: 26h
(ENG) TEORIA	Hours: 51h Theory classes: 21h Self study: 30h
(ENG) PRESENTACIÓ EMPRESA/CENTRE DE RECERCA DEL SECTOR	Hours: 1h Guided activities: 1h

Bibliography

Basic:

- Raymer, Daniel P. Aircraft design: a conceptual approach. 4th ed. Washington: Ed. American Institute of Aeronautics and Astronautics, 2006. ISBN 1563478293.
- Newman, Dava. Interactive aerospace engineering and design. Boston: Ed. McGraw-Hill, 2002. ISBN 0072348208.
- Cruise, A.M. Principles of space instrument design. New York: Ed. Cambridge University Press, 1998. ISBN 9780521025942.
- De Neufville, Richard; Odoni, Amedeo R. Airport systems: planning design, and management. New York: Ed. McGraw-Hill, 2003. ISBN 0071384774.

Complementary:

- Valavanis, K. Advances in unmanned aerial vehicles: state of the art and the road to autonomy. Dordrecht: Ed. Springer, 2007. ISBN 9781402061134.
- Ward, Donald T.; Strganac, Thomas W.; Niewoehner, Robert. Introduction to flight test engineering. 3th ed. Dubuque: Ed. Kendall/Hunt, 2006. ISBN 9780757529344.
- Musgrave, Gary Eugene; Larsen, Axel M.; Sgobba, Tommaso. Safety design for space systems [Recurs electrònic] [on line]. Oxford: Ed. Butterworth-Heinemann, 2009 Available on: <<http://www.sciencedirect.com/science/book/9780750685801>>. ISBN 9780750685801.