Last update: 18-06-2014

300234 - TE-MP6 - Structural Theory

Coordinating unit: 300 - EETAC - Castelldefels School of Telecommunications and Aerospace Engineering
Teaching unit: 737 - RMEE - Department of Strength of Materials and Structural Engineering
Academic year: 2014
Degree: BACHELOR'S DEGREE IN AIRPORT ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
ECTS credits: 6 Teaching languages: Catalan

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 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)
2. CE 23 AEROP. Conocimiento aplicado de: edificación; electricidad; electrotecnia; electrónica; mecánica del vuelo; hidráulica; instalaciones aeroportuarias; ciencia y tecnología de los materiales; teoría de estructuras; mantenimiento y explotación de aeropuertos; transporte aéreo, cartografía, topografía, geotecnia y meteorología. (CIN/308/2009, BOE 18.2.2009)

Generical:

12. EFFICIENT USE OF EQUIPMENT AND INSTRUMENTS - Level 1: Using instruments, equipment and software from the laboratories of general or basic use. Realising experiments and proposed practices and analyzing obtained results.
13. EFFICIENT USE OF EQUIPMENT AND INSTRUMENTS - Level 2: Use the correct instruments, equipment and laboratory software for specific or specialized knowledge of their benefits. A critical analysis of the experiments and results. Correctly interpret manuals and catalogs. Working independently, individually or in groups, in the laboratory.
14. 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:

3. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
4. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.
5. 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.
6. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 1. Planning oral communication, answering questions properly and writing straightforward texts that are spelt correctly and are grammatically coherent.
7. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.
8. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and

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written presentations. Adapting to audiences and communication aims by using suitable strategies and means.

9. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.
10. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
11. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.

Learning objectives of the subject

Study load

Total learning time: 150h	Hours large group:	39h	26.00%
	Hours medium group:	16h	10.67%
	Hours small group:	10h	6.67%
	Guided activities:	1h	0.67%
	Self study:	84h	56.00%

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Content

(ENG) Tema 1: Anàlisi d'estructures	Learning time: 51h Theory classes: 13h 30m Practical classes: 5h Laboratory classes: 2h 30m Self study : 30h
(ENG) Tema 2: Introducció a les estructures de formigó armat	Learning time: 56h Theory classes: 16h Practical classes: 6h Laboratory classes: 5h Self study : 29h
(ENG) Tema 3: Introducció a les estructures d'acer	Learning time: 43h Theory classes: 9h 30m Practical classes: 5h Laboratory classes: 2h 30m Guided activities: 1h Self study : 25h

Bibliography

Basic:

Ministerio de Fomento. Código técnico de la Edificación DB-SE, DB-SE-AE, DB-SE-A. 2006.

Ministerio de Fomento. Instrucción EHE. 2008.

Monfort Lleonart, J. Estructuras metálicas para edificación. 2012. Valencia: Edicions UPV, 2006. ISBN 8483630214.

Dirección General de la Vivienda, la Arquitectura y el Urbanismo. Documento básico SE-AE [Recurs electrònic]: seguridad estructural, acciones en la edificación [on line]. Madrid: Ed. Liteam, 2014Available on: <http://www.fomento.gob.es/NR/rdonlyres/118EEE6C-BA87-4148-8B38-DF01CEAD8496/95704/4.pdf>.

Dirección General de la Vivienda, la Arquitectura y el Urbanismo. Documento básico SE-A [Recurs electrònic]: seguridad estructural, acero [on line]. Madrid: Ed. Ministerio de Fomento, 2008Available on: <http://www.fomento.gob.es/NR/rdonlyres/B601AD05-5935-4C7B-90B7-1933B619460E/95706/6.pdf>.

Dirección General de la Vivienda, la Arquitectura y el Urbanismo. Documento básico SE [Recurs electrònic]: seguridad estructural [on line]. Madrid: Ed. Ministerio de Fomento, 2009Available on: <http://www.fomento.gob.es/NR/rdonlyres/04811CC4-8F53-4D3F-892C-F3D77E5189E0/95703/3.pdf>.

Complementary:

Ministerio de Fomento. Instrucció EAE. 2011.