

330251 - DEAD - Electronic Design Analog -Digital

Coordinating unit:	330 - EPSEM - Manresa School of Engineering
Teaching unit:	750 - EMIT - Department of Mining, Industrial and ICT Engineering
Academic year:	2019
Degree:	BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Teaching unit Optional)
ECTS credits:	6
Teaching languages:	Catalan, English

Teaching staff

Coordinator:	RICARD SANAHUJA MOLINER
Others:	JESÚS VICENTE RODRIGO - VICTOR BARCONS XIXONS

Degree competences to which the subject contributes

Specific:

1. (ENG) La capacitat d'especificar, analitzar, dissenyar, avaluar i documentar circuits electrònics, tant digitals com analògics i combinar-los, així com les seves alternatives d'implementació, especialment en l'àmbit de programables.
2. (ENG) La capacitat d'emprar les eines i els llenguatges d'especificació, síntesi i verificació de circuits digitals.
3. (ENG) El coneixement i la capacitat d'emprar les eines i la instrumentació existents per a l'anàlisi, el disseny, el desenvolupament i la verificació de sistemes electrònics, informàtics i de comunicacions.

Transversal:

4. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.
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.
6. 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.

Learning objectives of the subject

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Study load

Total learning time: 150h	Hours large group:	30h	20.00%
	Hours medium group:	0h	0.00%
	Hours small group:	30h	20.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

Content

(ENG) 1. INTRODUCCIÓ	Learning time: 8h Theory classes: 2h Practical classes: 2h Self study : 4h
(ENG) 2. DISPOSITIUS PROGRAMABLES DIGITALS I ANALÒGICS, I LA SEVA CONNEXIÓ	Learning time: 104h Theory classes: 22h Practical classes: 22h Self study : 60h
(ENG) 3. DISSENY DE PLAQUES DE CIRCUIT IMPRÉS	Learning time: 38h Theory classes: 6h Practical classes: 6h Self study : 26h

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Planning of activities

(ENG) TÍTOL DE L'ACTIVITAT 1: CLASSES MAGISTRALS I PARTICIPATIVES	Hours: 25h Theory classes: 25h
(ENG) TÍTOL DE L'ACTIVITAT 2: CLASSES DE LABORATORI	Hours: 75h Practical classes: 30h Self study: 45h
(ENG) TÍTOL DE L'ACTIVITAT 3: TREBALL PERSONAL INDIVIDUAL/EN GRUP	Hours: 20h Self study: 20h
(ENG) TÍTOL DE L'ACTIVITAT 4: PROVES	Hours: 30h Theory classes: 5h Self study: 25h

Bibliography

Basic:

Ashenden, Peter J. Digital design : an embedded systems approach using VHDL. Burlington, MA: Morgan Kaufmann Publishers, 2007. ISBN 9780123695284.

Torres, Manuel. Diseño e ingeniería electrónica asistida por ordenador en Protel. Madrid: Ed: Ra-Ma, 1999. ISBN 9788478973408.