Last update: 19-07-2019

330105 - ED - Digital Electronics

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 2016). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)

ECTS credits: 6 Teaching languages: Catalan

Teaching staff

Coordinator: JESUS VICENTE RODRIGO

Degree competences to which the subject contributes

Specific:

1. (ENG) La capacitat d'especificar, analitzar, dissenyar, avaluar i documentar circuits digitals, tant seqüencials com combinacionals, així com les seves alternatives d'implementació.
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.
7. 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.

Learning objectives of the subject

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Study load

Total learning time: 150h	Hours large group:	45h	30.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	10.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

Content

(ENG) 1. CODIS BINARIS	Learning time: 9h Theory classes: 3h Self study : 6h
(ENG) 2. CIRCUITS INTEGRATS DIGITALS	Learning time: 11h Theory classes: 3h Practical classes: 2h Self study : 6h
(ENG) 3. LÒGICA COMBINACIONAL	Learning time: 60h Theory classes: 18h Practical classes: 6h Self study : 36h
(ENG) 4. LÒGICA SEQUENCIAL	Learning time: 70h Theory classes: 21h Practical classes: 7h Self study : 42h

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Planning of activities

(ENG) 1. CLASSE EXPOSITIVA I DE PROBLEMES	Hours: 40h Theory classes: 40h
(ENG) 2. CLASSE DE LABORATORI	Hours: 25h Laboratory classes: 15h Self study: 10h
(ENG) 3. TREBALL PERSONAL INDIVIDUAL/ EN GRUP	Hours: 50h Self study: 50h
(ENG) 4. PROVES	Hours: 35h Theory classes: 5h Self study: 30h

Bibliography

Basic:

Floyd, Thomas L. Fundamentos de sistemas digitales [on line]. 11a ed. Madrid: Pearson Educación, 2016Available on: <https://discovery.upc.edu/iii/encore/record/C__Rb1510171?lang=cat>. ISBN 9788490353004.

Wakerly, John F. Diseño digital: principios y prácticas. 3ª ed. México: Pearson Educación, 2001. ISBN 9701704045.

Katz, R. H.; Boriello, G. Contemporary logic design. 2nd ed. Upper Saddle River: Pearson, 2005. ISBN 0131278304.

Money Harris, David; Harris, Sarah L. Digital design and computer architecture [on line]. 2nd ed. Amsterdam: Elsevier, 2013 [Consultation: 31/05/2019]. Available on: <https://discovery.upc.edu/iii/encore/record/C__Rb1437684?lang=cat>. ISBN 9780123944245.