

330108 - IE - Electronic Instrumentation

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: INMACULADA MARTINEZ TEIXIDOR

Others: Delis Ramos, Francisco Manuel

Degree competences to which the subject contributes

Specific:

1. (ENG) Coneixement aplicat de la instrumentació electrònica.
2. (ENG) - Coneixement del modelat i la simulació de sistemes de mesura.

Transversal:

3. 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.
4. 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.
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 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.

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) Títol contingut 1: INTRODUCCIÓ A LA INSTRUMENTACIÓ ELECTRÒNICA	Learning time: 10h Theory classes: 3h Laboratory classes: 1h Self study : 6h
(ENG) Títol contingut 2: TRANSDUCTORS	Learning time: 40h Theory classes: 12h Laboratory classes: 4h Self study : 24h
(ENG) Títol contingut 3: CIRCUITS CONDICIONADORS	Learning time: 30h Theory classes: 9h Laboratory classes: 3h Self study : 18h
(ENG) Títol contingut 4: SISTEMES D'ADQUISICIÓ DE DADES	Learning time: 40h Theory classes: 12h Laboratory classes: 4h Self study : 24h
(ENG) Títol contingut 5: SOFTWARE D'INSTRUMENTACIÓ	Learning time: 30h Theory classes: 9h Laboratory classes: 3h Self study : 18h

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Planning of activities

(ENG) TÍTOL DE L'ACTIVITAT 1: INTRODUCCIÓ AL LABORATORI D'ELECTRÒNICA	Hours: 1h Laboratory classes: 1h
(ENG) TÍTOL DE L'ACTIVITAT 2: PRÀCTIQUES DE LABORATORI D'INSTRUMENTACIÓ ELECTRÒNICA	Hours: 49h Laboratory classes: 14h Self study: 35h
(ENG) TÍTOL DE L'ACTIVITAT 3: PROVA ESCRITA	Hours: 12h Theory classes: 2h Self study: 10h
(ENG) TÍTOL DE L'ACTIVITAT 4: PROVA ESCRITA	Hours: 20h Theory classes: 2h Self study: 18h

Bibliography

Basic:

Pérez García, Miguel Angel. Instrumentación electrónica. Madrid: Thomson, 2014. ISBN 9788428337021.

Complementary:

Paton, B. E. Sensors, transducers and labview. New Jersey: Prentice Hall, 1999.

Short tutorial on VXI/MXI: application note 030 [on line]. Austin: National Instruments, 2010 [Consultation: 25/02/2014]. Available on: <<http://www.ni.com/white-paper/2899/en/>>.

Johnson, Gary W.; Jennings, Richard W. LabVIEW graphical programming: practical applications in instrumentation and control. 4th ed. New York: McGraw-Hill, 2006. ISBN 0071451463.

Others resources: