Last update: 28-05-2018

340103 - CIEL-E4O09 - Electrical Circuits

Coordinating unit: 340 - EPSEVG - Vilanova i la Geltrú School of Engineering

Teaching unit: 709 - EE - Department of Electrical Engineering

Academic year: 2018

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)

ECTS credits: 6 Teaching languages: Catalan

Teaching staff

Coordinator: Enric Ferrer i Bardem

Degree competences to which the subject contributes

Specific:

1. CE31. Knowledge of differents types of electrical disturbances and implementation of corrective measures.

2. CE32. Ability to analize electrical circuits in all possible regimes.

Transversal:

3. 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.
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.

Learning objectives of the subject

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%

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Content

(ENG) Tema 1: Circuits trifàsics desequilibrats	Learning time: 11h Theory classes: 3h Practical classes: 2h Self study : 6h
(ENG) Tema 2: Circuits amb excitació periòdica no sinusoïdal	Learning time: 17h Theory classes: 5h Practical classes: 2h Self study : 10h
(ENG) Tema 3: Règims transitoris: Circuits de primer i segon ordre	Learning time: 32h Theory classes: 8h Practical classes: 4h Self study : 20h
(ENG) Tema 4: Equacions d'estat	Learning time: 14h Theory classes: 4h Practical classes: 2h Self study : 8h
(ENG) Tema 5: Anàlisi de circuits mitjançant mètodes operacionals	Learning time: 24h Theory classes: 6h Practical classes: 3h Self study : 15h
(ENG) Tema 6: Quadripols biports	Learning time: 16h Theory classes: 4h Practical classes: 2h Self study : 10h

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(ENG) Pràctiques de simulació	Learning time: 36h Laboratory classes: 15h Guided activities: 6h Self study : 15h

Bibliography

Basic:

Nilsson, James W.; Riedel, Susan A. Circuitos eléctricos. 7a ed. México [etc.]: Pearson Educación, 2005. ISBN 8420544582.

Alexander, Charles K.; Sadiku, Matthew N. O. Fundamentos de circuitos eléctricos. 3a ed. México [etc.]: Mc Graw-Hill, 2002. ISBN 970105606X.

Gómez Expósito, Antonio. Teoría de circuitos : ejercicios de autoevaluación. Madrid: Thomson-Paraninfo, 2005. ISBN 8497324188.

Nahvi, Mahmood; Edminister, Joseph A. Circuitos eléctricos y electrónicos. 4a ed. Madrid [etc.]: Mc Graw-Hill, 2005. ISBN 8448145437.

Goody, Roy W. OrCAD PSpice para Windows. 3a ed. Madrid [etc.]: Prentice Hall, 2002-2004. ISBN 8420534692, 8420537047, 8420541729.

Ogayar Fernández, Blas; López Valdivia, Andrés. Teoría de circuitos con OrCAD PSpice : 20 prácticas de laboratorio. Madrid: Ra-ma, 2000. ISBN 8478974148.