

Course guide

240IEL31 - 240IEL31 - Electric Energy Conversion

Last modified: 16/04/2024

Unit in charge: Barcelona School of Industrial Engineering
Teaching unit: 709 - DEE - Department of Electrical Engineering.

Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2014). (Optional subject).

Academic year: 2024 **ECTS Credits:** 4.5 **Languages:** Catalan

LECTURER

Coordinating lecturer: DANIEL MONTESINOS MIRACLE

Others: Primer quadrimestre:
DANIEL MONTESINOS MIRACLE - 10

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CEELECT1. Design electronic systems (mixed analogical and digital systems and micro-mechanical systems on silicon, digital systems based on discrete components, logical programable devices and/or microprocessors, electronic instrumentation systems and power electronic systems) and manage development projects and/or commercialization of electronic systems or development projects and/or commercialization of systems in which the electronic subsystems have an important specific weight.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

Al finalitzar l'assignatura, l'estudiant ha de ser capaç de:

*Entendre el funcionament d'un convertidor estàtic de potencia.

*Dimensionar i seleccionar els elements principals d'un convertidor estàtic de potencia

STUDY LOAD

Type	Hours	Percentage
Hours large group	27,0	24.00
Hours small group	13,5	12.00
Self study	72,0	64.00

Total learning time: 112.5 h

CONTENTS

title english

Description:

content english

Related competencies :

CEEELECT1. Design electronic systems (mixed analogical and digital systems and micro-mechanical systems on silicon, digital systems based on discrete components, logical programable devices and/or microprocessors, electronic instrumentation systems and power electronic systems) and manage development projects and/or commercialization of electronic systems or development projects and/or commercialization of systems in which the electronic subsystems have an important specific weight.

Full-or-part-time: 39h

Theory classes: 39h

title english

Description:

content english

Full-or-part-time: 7h

Theory classes: 7h

title english

Description:

content english

Full-or-part-time: 7h

Theory classes: 7h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Barrade, Philippe. Électronique de puissance : méthodologie et convertisseurs élémentaires. Lausanne: Presses polytechniques et universitaires romandes, cop. 2006. ISBN 9782880745660.
- Mohan, Ned; Undeland, Tore M; Robbins, William P. Power electronics : converters, applications, and design. 3rd ed. New York [etc.]: John Wiley & Sons, cop. 2003. ISBN 9780471226932.
- Buso, Simone; Mattavelli, Paolo. Digital control in power electronics [on line]. [San Rafael, Calif.]: Morgan & Claypool Publishers, cop. 2006 [Consultation: 15/10/2015]. Available on: <http://site.ebrary.com/lib/upcatalunya/detail.action?docID=10515731>. ISBN 9781598291124.
- Blaabjerg, Frede; Kazmierkowski, Marian P; Krishnan, Ramu. Control in power electronics : selected problems [on line]. Amsterdam [etc.]: Academic Press, cop. 2002 [Consultation: 15/10/2015]. Available on: <http://www.sciencedirect.com/science/book/9780124027725>. ISBN 0124027725.