

220253 - Design of Electric Systems with Renewable Energy

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
 Teaching unit: 709 - EE - Department of Electrical Engineering
 Academic year: 2019
 Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Teaching unit Optional)
 ECTS credits: 5 Teaching languages: Catalan, Spanish

Teaching staff

Coordinator: SANTIAGO BOGARRA RODRIGUEZ
 Others: ANTONIO GARCIA ESPINOSA - JORDI ROGER RIBA RUIZ

Degree competences to which the subject contributes

Specific:

1. Capability for modeling, analysis, calculation and design of electrical power systems.
2. Ability to calculate and design electrical machines and actuators, with knowledge of efficient electrical systems and efficient control of electrical drives.
3. Ability to project conventional and non-conventionals power facilities.
4. Knowledge to data integration and industrial communications.
5. Knowledge to the management and monitoring of automated information processes energy.
6. Ability to model and solve problems associated with the operation of electric power systems by integrating information technologies and communication: protection, network operation, and electricity market stability.

Learning objectives of the subject

Study load

Total learning time: 125h	Hours large group:	30h	24.00%
	Hours small group:	15h	12.00%
	Self study:	80h	64.00%

220253 - Design of Electric Systems with Renewable Energy

Content

(ENG) Projecte de sistemes elèctrics amb energia eòlica	Learning time: 63h Theory classes: 16h Laboratory classes: 7h Self study : 40h
(ENG) Projecte de sistemes elèctrics amb energia fotovoltaica	Learning time: 62h Theory classes: 14h Laboratory classes: 8h Self study : 40h

Planning of activities

(ENG) PROJECTES	Hours: 70h Theory classes: 15h Laboratory classes: 15h Self study: 40h
(ENG) EXAMEN PARCIAL	Hours: 28h Theory classes: 8h Self study: 20h
(ENG) EXAMEN FINAL	Hours: 27h Self study: 20h Theory classes: 7h

220253 - Design of Electric Systems with Renewable Energy

Bibliography

Basic:

Rodríguez Amenedo, J. L; Burgos Díaz, J. C; Arnalte Gómez, S. Sistemas eólicos de producción de energía eléctrica. Alcorcón: Rueda, DL 2003. ISBN 9788472071391.

Villarrubia López, Miguel. Energía eólica. Barcelona: CEAC, cop. 2004. ISBN 9788432910623.

Villarrubia López, Miguel. Ingeniería de la energía eólica. Barcelona: Marcombo, 2012. ISBN 9788426715807.

Zabalza Bribián, I. [et al.]. El ahorro energético en el nuevo código técnico de la edificación. Madrid: Fundación Confemetal, DL 2007. ISBN 9788496743304.

Tobajas Vázquez, M. Carlos. Energía solar fotovoltaica. 2ª ed. Barcelona: Ceysa, 2005. ISBN 8486108624.

Martínez Jiménez, Amador; Toledano, José Carlos. Dimensionado de instalaciones solares fotovoltaicas. Madrid: Paraninfo, cop. 2012. ISBN 8428332983.

Castañer Muñoz, Luis; Silvestre Berges, Santiago. Modelling photovoltaic systems: using PSpice. Chichester: John Wiley & Sons, cop. 2002. ISBN 9780470845271.