

Course guides

820258 - ADIESEIA - Applications and Sizing of Solar Energy Facilities

Last modified: 05/05/2017

Unit in charge:	Barcelona East School of Engineering	
Teaching unit:	710 - EEL - Department of Electronic Engineering.	
Degree:	BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Optional subject). BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).	
Academic year: 2015	ECTS Credits: 6.0	Languages: Catalan, English, Spanish

LECTURER

Coordinating lecturer: HERMINIO MARTÍNEZ GARCÍA.

Others: HERMINIO MARTÍNEZ GARCÍA.

PRIOR SKILLS

Please, see Spanish or Catalan version.

REQUIREMENTS

Please, see Spanish or Catalan version.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. Analyse and simulate specific energy systems.
2. Determine the best way to store energy on a case-by-case basis.
3. Explain the operating principles of power conversion systems and their application to transport and distribution systems.
4. Design an energy saving system using different processes and technologies.

Transversal:

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.

TEACHING METHODOLOGY

Please, see Spanish or Catalan version.

LEARNING OBJECTIVES OF THE SUBJECT

Please, see Spanish or Catalan version.

STUDY LOAD

Type	Hours	Percentage
Hours large group	52,5	35.00
Hours small group	7,5	5.00
Self study	90,0	60.00

Total learning time: 150 h

CONTENTS

(ENG) 4.- Sistemes d'Energia Solar Fotovoltaica (ESF).

Full-or-part-time: 17 h

Theory classes: 2h

Self study : 15h

(ENG) 4.- Sistemes d'Energia Solar Fotovoltaica (ESF).

Full-or-part-time: 24 h

Theory classes: 9h

Self study : 15h

(ENG) 6.- Integració de Sistemes d'Energia Solar Fotovoltaica.

Full-or-part-time: 29 h

Theory classes: 9h

Laboratory classes: 5h

Self study : 15h

(ENG) 5.- Estructures Estàtiques de Conversió i Processat d'Energia Elèctrica en Instal·lacions d'Energies Renovables.

Full-or-part-time: 30 h

Theory classes: 9h

Laboratory classes: 6h

Self study : 15h

(ENG) 2.- Sistemes d'Energia Solar Tèrmica (EST).

Full-or-part-time: 23 h

Theory classes: 8h

Self study : 15h



(ENG) 3.- Integració de Sistemes d'Energia Solar Tèrmica.

Full-or-part-time: 27 h

Theory classes: 8h

Laboratory classes: 4h

Self study : 15h

GRADING SYSTEM

Please, see Spanish or Catalan version.

EXAMINATION RULES.

Please, see Spanish or Catalan version.

BIBLIOGRAPHY

Basic:

- Ribot Martín, Jaume. Curso de energía solar. Barcelona: C.T.E. Centro de Tecnología Educativa, 1988-1989. ISBN 8476080549.
- Energía solar fotovoltaica : manual del proyectista. [Valladolid]: Ente Regional de la Energía de Castilla y León (EREN), 2004. ISBN 849718257X.
- Alonso Abella, M. Sistemas fotovoltaicos: introducción al diseño y dimensionado de instalaciones de energía solar fotovoltaicas. 2ª ed. Madrid: Publicaciones Técnicas, cop. 2005. ISBN 8486913128.
- Instalaciones de energía solar. Sevilla: PROGENSA, 1997-2001. ISBN 8486505380.
- Energía solar térmica : manual de climatización solar. [Valladolid]: Ente Regional de la Energía de Castilla y León (EREN), DL 2007. ISBN 9788497184908.
- Energía solar térmica : manual del arquitecto. León: Junta de Castilla y León. Consejería de Industria, Comercio y Turismo, DL 2002. ISBN 8497181131.

Complementary:

- Pareja Aparicio, M. Energía solar fotovoltaica : cálculo de una instalación aislada. 2ª ed. Barcelona: Marcombo, 2010. ISBN 9788426715968.
- Perales Benito, T. Instalación de paneles solares térmicos : componentes, instalación, [desarrollo de proyectos]. 4ª ed. [Sevilla?]: Creaciones Copyright, cop. 2009. ISBN 9788496300903.
- Monge Malo, L. Instalaciones de energía solar térmica para la obtención de ACS en viviendas. Barcelona: Marcombo, 2010. ISBN 9788426715920.
- Tobajas Vázquez, M. C. Energía solar térmica para instaladores. 3ª ed. [Barcelona]: Cano Pina: Ceysa, 2008. ISBN 9788496960183.
- Tobajas Vázquez, M. C. Energía solar fotovoltaica. 3ª ed. [Barcelona]: Cano Pina: Ceysa, 2008. ISBN 9788496960190.