



Course guide

820340 - GEEE - Energy Management with Electronic Equipment

Last modified: 02/07/2024

Unit in charge: Barcelona East School of Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering.

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
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: 2024 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Francisco Casellas Beneyto
Guillermo Velasco Quesada

Others:

PRIOR SKILLS

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

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	20.00
Self study	90,0	60.00
Hours small group	30,0	20.00

Total learning time: 150 h



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Description:

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Full-or-part-time: 15h

Theory classes: 15h

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Description:

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Full-or-part-time: 45h

Theory classes: 45h

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Description:

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Full-or-part-time: 16h

Self study : 16h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Wentworth, Peter; Elkner, Jeffrey; Downey, Allen B.; Meyers, Chris. How to think like a computer scientist : learning with Python 3 (RLE) [on line]. [Lloc de publicació no identificat]: [els autors], 2012 [Consultation: 22/01/2024]. Available on: <http://openbookproject.net/thinkcs/python/english3e/>.

Complementary:

- Alonso Abella, Miguel. Sistemas fotovoltaicos: introducción al diseño y dimensionado de instalaciones de energía solar fotovoltaicas. 2ª ed. Madrid: Publicaciones Técnicas, cop. 2005. ISBN 8486913128.

- Curso de experto profesional en energía fotovoltaica. Sevilla: PROGENSA, cop. 2009. ISBN 9788495693495.

- Tudor, James; Valenzuela, Bernarda Rojas. Python para principiantes : Aprender Python en 5 días con orientación paso a paso y ejercicios prácticos [on line]. 2019. [Place of publication not identified]: Babelcube Books, 2019 [Consultation: 14/09/2022]. Available on :

<https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=5904156>. ISBN 1071509268.

- Iyer, Shivkumar V.. Simulating Nonlinear Circuits with Python Power Electronics An Open-Source Simulator, Based on Python. Springer International Publishing, 2018. ISBN 978-3-319-73984.

- Chauhan, Rajeev & Chauhan, Kalpana & Singh, Sn & Kiliç, Heybet & Yilmaz, Musa.. Microgrids for Rural Areas: Research and case studies.. 2020. ISBN 9781785619991.