

310507 - Building Energetic Management

Coordinating unit: 310 - EPSEB - Barcelona School of Building Construction
 Teaching unit: 758 - EPC - Department of Project and Construction Engineering
 Academic year: 2019
 Degree: MASTER'S DEGREE IN BUILDING CONSTRUCTION MANAGEMENT (Syllabus 2015). (Teaching unit Compulsory)
 ECTS credits: 5 Teaching languages: Spanish

Teaching staff

Coordinator: Gangolells Solanellas, Marta

Opening hours

Timetable: To agree.

Degree competences to which the subject contributes

Specific:

CE15MUGE. Building energy manage and apply improvements in energy efficiency and for reduce operating costs

Teaching methodology

The methodology includes:

- Lectures
- Practical sessions
- Self-study

Learning objectives of the subject

At the end of the subject, students will be able to detect, analyse and take decisions related to improving the energy efficiency of existing buildings. The subject will provide knowledge, skills and competences needed to implement energy management systems, to conduct energy audits and to identify technically and economically viable energy efficiency measures. The subject will also provide knowledge, skills and competences to understand the energy market and the operation of Energy Saving Companies.

Study load

Total learning time: 125h	Hours large group:	17h 30m	14.00%
	Hours medium group:	5h	4.00%
	Hours small group:	5h	4.00%
	Guided activities:	7h 30m	6.00%
	Self study:	90h	72.00%

310507 - Building Energetic Management

Content

<p>ISO 50001 energy management system</p>	<p>Learning time: 41h 40m</p> <p>Theory classes: 5h 50m Practical classes: 1h 40m Laboratory classes: 1h 40m Guided activities: 2h 30m Self study : 30h</p>
<p>Description:</p> <ul style="list-style-type: none"> - Introduction, goal and scope - General Requirements - Management Responsibility - Energy Policy - Energy Action Plan - Implementation and operation - Performance Audits - Management Review 	
<p>Energy audits</p>	<p>Learning time: 41h 40m</p> <p>Theory classes: 5h 50m Practical classes: 1h 40m Laboratory classes: 1h 40m Guided activities: 2h 30m Self study : 30h</p>
<p>Description:</p> <ul style="list-style-type: none"> - Introduction - Legal framework - Methodology - Planning - On-site monitoring - Energy assessment - Identification of energy efficiency measures and economic analysis - Energy results and final report 	

310507 - Building Energetic Management

<p>Energy market and Energy Service Companies</p>	<p>Learning time: 41h 40m Theory classes: 5h 50m Practical classes: 1h 40m Laboratory classes: 1h 40m Guided activities: 2h 30m Self study : 30h</p>
<p>Description:</p> <ul style="list-style-type: none"> - Introduction to the electricity market - Electricity bill - Electricity tariffs - Introduction to the gas market - Gas bill - Gas tariffs - Other fuels - Introduction to Energy Service Companies - Energy Supply contracting and energy performance contracting - Performance verification - Case studies 	

Qualification system

The final grade depends on the following assessment criteria:

- Exam (30%)
- Team project (35%)
- Individual projects and activities (30%)

Bibliography

Basic:

Asociación Española de Normalización y Certificación. UNE-EN ISO 50001 : sistemas de gestión de la energía : requisitos con orientación para su uso. Madrid: Aenor, 2011.

Norma UNE-EN 16247-1 Auditorías energéticas. Parte 1: Requisitos generales. Madrid: AENOR, 2014.

Norma UNE-EN 16247-2. Auditorías energéticas. Parte 2 : Edificios. Madrid: AENOR, 2014.

Krarti, Moncef. Energy audit of building systems : an engineering approach. 2nd ed. Boca Raton, FL: CRC Press, 211. ISBN 978-1439828717.