Course guide
310507 - 310507 - Building Energetic Management

Unit in charge: Barcelona School of Building Construction
Teaching unit: 758 - EPC - Department of Project and Construction Engineering.
Degree: MASTER'S DEGREE IN BUILDING CONSTRUCTION MANAGEMENT (Syllabus 2015). (Compulsory subject).
Academic year: 2022 ECTS Credits: 5.0 Languages: Spanish

LEADER

Coordinating lecturer: Gangolells Solanellas, Marta
Others: Francesc Amorós, Jordi Simó

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guided activities</td>
<td>7,5</td>
<td>6.00</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>5.0</td>
<td>4.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>17,5</td>
<td>14.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>5,0</td>
<td>4.00</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>72.00</td>
</tr>
</tbody>
</table>

Total learning time: 125 h
CONTENTS

ISO 50001 energy management system

Description:
- Introduction, goal and scope
- General Requirements
- Management Responsibility
- Energy Policy
- Energy Action Plan
- Implementation and operation
- Performance Audits
- Management Review

**Full-or-part-time:** 41h 40m
Theory classes: 5h 50m
Practical classes: 1h 40m
Laboratory classes: 1h 40m
Guided activities: 2h 30m
Self study: 30h

Energy audits

Description:
- Introduction
- Legal framework
- Methodology
- Planning
- On-site monitoring
- Energy assessment
- Identification of energy efficiency measures and economic analysis
- Energy results and final report

**Full-or-part-time:** 41h 40m
Theory classes: 5h 50m
Practical classes: 1h 40m
Laboratory classes: 1h 40m
Guided activities: 2h 30m
Self study: 30h
Energy market and Energy Service Companies

Description:
- 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

Full-or-part-time: 41h 40m
- Theory classes: 5h 50m
- Practical classes: 1h 40m
- Laboratory classes: 1h 40m
- Guided activities: 2h 30m
- Self study: 30h

GRADING SYSTEM

The final grade depends on the following assessment criteria:
- Exam (30%)
- Team project (35%)
- Individual projects and activities (30%)

BIBLIOGRAPHY

Basic: