820064 - PI - Facilities Projects

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 717 - EGE - Department of Engineering Presentation
Academic year: 2019
Degree: BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Optional)
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BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
ECTS credits: 6
Teaching languages: Spanish

Teaching staff
Coordinator: JOSÉ LUIS RODRÍGUEZ ESPANTOSO
Others: JOSÉ LUIS RODRÍGUEZ ESPANTOSO

Requirements
have completed Q7

Degree competences to which the subject contributes

Specific:
1. Study the feasibility of a proposed project.

Transversal:
2. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
3. 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
The unfulfilled methodology uses the exhibition by 25% in individual workplaces by 25%, a job in the group by 20% and the Learning Projects based on 30%.

Learning objectives of the subject
Learn to make different Facilities Engineering Projects from a practical perspective, covers design, the rules, calculations, plans and budgets inherent to these embodiments.
# Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 30h</th>
<th>20.00%</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 0h</td>
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<tr>
<td></td>
<td>Hours small group: 30h</td>
<td>20.00%</td>
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<td></td>
<td>Guided activities: 0h</td>
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<tr>
<td></td>
<td>Self study: 90h</td>
<td>60.00%</td>
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</table>
## Content

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Learning time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(ENG) - Chapter 1. INTRODUCTION A LEGAL AND REGULATORY BASIC INDUSTRIAL</strong></td>
<td>3h</td>
<td>Engineers in free exercise, professional attributions, responsibilities, the Professional College and the Visa. Legalization of Municipalities, Law 20/2009. Legalization in front of S.S.T.T. of Industry, industrial registration number and Industiral Security regulations. The E.I.C. Functions and performances. Teach models of projects that have already been legalized, inspection records, completion of technical documentation.</td>
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</tbody>
</table>
| **(ENG) - Chapter 2. DATA AND BASIC CRITERIA FOR DESIGN OF SPECIFIC INSTALLATIONS** | 3h            | Theory classes: 1h  
Self study : 2h |
| **(ENG) - Chapter 3. LIGHTING PROJECTS**                               | 6h            | Basic concepts of lighting technology. Types of lamps Stroboscopic effect. Typical electrical diagrams for lighting lights. Lighting projects using the DIALUX computer application. |
| **(ENG) - Chapter 4. ELECTRICAL SYSTEMS PROJECTS**                      | 9h            | Theory classes: 2h  
Practical classes: 1h  
Self study : 6h |

Description:
### (ENG) - Chapter 5. INDUSTRIAL SECURITY MEASURES

**Description:**
Know and interpret the basic regulations on fire protection: CTE-DB SI, RSCIEI and RIPCI. Scripts of minimum contents in terms of fire protection.

**Learning time:** 9h
- Theory classes: 2h
- Practical classes: 1h
- Self study: 6h

### (ENG) - Chapter 6. PLUMBING PROJECTS

**Description:**
General scheme of the sanitary cold water installation. Points of consumption and calculation of pipes.

**Learning time:** 9h
- Theory classes: 2h
- Laboratory classes: 1h
- Self study: 6h

### (ENG) - Chapter 7. VENTILATION PROJECTS

**Description:**
Know the importance of ventilating the premises. Dimension networks of conduits and fans needed, and know the auxiliary elements typical of a ventilation installation.

**Learning time:** 9h
- Theory classes: 1h
- Laboratory classes: 2h
- Self study: 6h

### (ENG) - Chapter 8. ALTERNATIVE ENERGY

**Description:**
Core items. Hydraulic diagrams Calculations of demand for domestic hot water and dimensioning of the solar installation required. Scripts of minimum contents of this type of projects.

**Learning time:** 6h
- Laboratory classes: 2h
- Self study: 4h
Planning of activities

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Theory classes:</th>
<th>Practical classes:</th>
<th>Laboratory classes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ENG) LLIÇÓ 1. INTRODUCCIÓ A L'ENGINYERIA LEGAL I NORMATIVA INDUSTRIAL BÀSICA</td>
<td>3h</td>
<td>1h</td>
<td>1h</td>
<td>1h</td>
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<tr>
<td>(ENG) LLIÇÓ 2. DADES I CRITERIS BÀSICS EN DISSENY DE INSTAL.LACIONS ESPECÍFIQUES</td>
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<td>(ENG) LLIÇÓ 3 .- PROJECTES D'IL·LUMINACIÓ</td>
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<td>(ENG) LLIÇÓ 4. PROJECTES D'ELECTRIFICACIÓ</td>
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<td>(ENG) LLIÇÓ 5 PROJECTES DE SISTEMES DE PROTECCIÓ CONTRA INCENDIS</td>
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<tr>
<td>(ENG) LLIÇÓ 6. PROJECTES D'INSTAL.LACIONS D'AI GUA</td>
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<tr>
<td>(ENG) LLIÇÓ 7. PROJECTES DE VENTILACIÓ</td>
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<td>(ENG) LLIÇÓ 8 .- PROJECTES D'INSTALACIONS DE CALEFACCIÓ I ACS PER ENERGIA SOLAR</td>
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Qualification system

Continuous evaluation of the student's work.
The student and autonomous work is evaluated, as well as in group, both face-to-face and non-face-to-face, applied to all the training activities.

- Individual evaluation in each session of autonomous learning in theoretical contents. 15%
- Individual evaluation by house autonomous exercise. 20%
- Individual assessment of skills acquired in practical cases. 20%
- Evaluation of the group of projects (including "Teamwork"). 40%

The specific weight in the final grade of the transversal competences is 5% each.
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**Bibliography**

**Basic:**


**Others resources:**

- Notes on ATENA.