390228 - TENG - Engineering Workshop

Coordinating unit: 390 - ESAB - Barcelona School of Agricultural Engineering
Teaching unit: 745 - EAB - Department of Agri-Food Engineering and Biotechnology
Academic year: 2019
Degree: BACHELOR'S DEGREE IN FOOD ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits: 6
Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: FRANCISCO IRANZO
Others: JOANA RUBIO-JOAN MAJO-EDUARD HERNÁNDEZ

Opening hours
Timetable: The students will be informed at the beginning of the course.

Teaching methodology
The methodology is based on the learning through practical cases. The necessary information to develop calculations to produce the next designs will be delivered to groups of 3 students.
They will have to project:
- Design of a cold chamber
- Design of a fire installation
- Design of electric installation
The students shall do an executive project including the designs previously made and the following documents:
- Doc-I. Report and Annexes
- Doc-II. Plans
- Doc-II. Budget

Learning objectives of the subject
Once the student has passed the subject, they would have the basic knowledge to understand what an executive professional project consists of.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 60h</th>
<th>Hours large group:</th>
<th>30h</th>
<th>50.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours small group:</td>
<td>30h</td>
<td>50.00%</td>
</tr>
</tbody>
</table>
## Content

<table>
<thead>
<tr>
<th>Title English</th>
<th>Learning time: 30h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 30h</td>
</tr>
</tbody>
</table>

### Description:

<table>
<thead>
<tr>
<th>LOW VOLTAGE ELECTRIC INSTALLATIONS</th>
<th>Learning time: 10h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Laboratory classes: 10h</td>
</tr>
</tbody>
</table>

### Description:
Regulation. Equipment. Line sizing (the highest intensity, brownout, shorting). Electrical safeguards for electrical lines, people and engines. Photometric calculations. Singleline schematic. Results implementation to be developed Project by the students group.

<table>
<thead>
<tr>
<th>FIRE INSTALLATIONS</th>
<th>Learning time: 10h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Laboratory classes: 10h</td>
</tr>
</tbody>
</table>

### Description:
Analysis and implementation of the Regulation Fire in the Industrial Establishments (RSCIEI). Results implementation to be developed Project by the student group.

<table>
<thead>
<tr>
<th>REFRIGERATING FACILITIES</th>
<th>Learning time: 10h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Laboratory classes: 10h</td>
</tr>
</tbody>
</table>

### Description:
Design of the refrigerating facility of a chamber, through a conventional system of simple compression. Location definition and constraints analysis. Thermal load calculation. Refrigerant selection. Calculation of the refrigeration cycle parameters through a commercial software. Selection of the main equipment of the installation composition. Compressor, implementation to be condenser, expansion valve, vessel and refrigerant pipelines. Results developed Project by the student group.
390228 - TENG - Engineering Workshop

Bibliography

Basic:
