Degree competences to which the subject contributes

Specific:
2. Knowledge of the basic concepts of mechanics, thermodynamics, electromagnetic fields and waves, and ability to apply them in engineering problems.

Transversal:
1. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.

Teaching methodology

The theory classes will consist of an introduction of the concepts required to achieve the course objectives. This will be done by the lecturer that will also show the use of these concepts on problems solving. The practical classes will be divided into problems sessions and laboratory practices. These sessions will be guided by the lecturer, and the students will work in groups. The teamwork capacity of students will be fostered, as well as their problem solving capacity. The support materials include the practices guides, problems lists and some notes of the course. These materials will be available at ATENEA.

Learning objectives of the subject

At the end of the course students will have attained basic knowledge of static, electromagnetism, especially electric circuits, heat transport and fluid dynamic. Students will be able to solve problems and questions related to these topics. Students will be able to put into practice knowledge and skill acquired in later courses, in particular, in subjects such as technological fundamentals of engineering or installations and agro-industrial buildings. In parallel, students will have to acquire a general view of science and the scientific method; to use dimensional analysis in problems solving and results verification, and to know the different mathematical skills that are used during the course very well. Students will become familiar to laboratory procedures, correctly use the laboratory material and learn to proceed with scientific rigor when taking, analyzing and presenting experimental data.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 40h</th>
<th>26.67%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Hours small group:</td>
<td>20h</td>
<td>13.33%</td>
</tr>
<tr>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
</tr>
</tbody>
</table>
## Content

<table>
<thead>
<tr>
<th>Description</th>
<th>Learning time</th>
<th>Theory classes</th>
<th>Laboratory classes</th>
<th>Self study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8h</td>
<td>3h</td>
<td></td>
<td>5h</td>
</tr>
<tr>
<td></td>
<td>42h</td>
<td>11h</td>
<td>6h</td>
<td>25h</td>
</tr>
<tr>
<td></td>
<td>16h</td>
<td>4h</td>
<td>2h</td>
<td>10h</td>
</tr>
<tr>
<td></td>
<td>27h</td>
<td>8h</td>
<td>4h</td>
<td>15h</td>
</tr>
</tbody>
</table>
Learning time: 57h
- Theory classes: 14h
- Laboratory classes: 8h
- Self study: 35h

Description:
- 

Related activities:
-
### Planning of activities

| Lectures | Hours: 34h  
Theory classes: 34h |
|-----------|--------------------------------|
| **name english** | Hours: 6h  
Theory classes: 6h |
| **Guided exercise practicals** | Hours: 16h  
Laboratory classes: 16h |
| **english** | |
| - | Hours: 15h  
Self study: 15h |
| **Laboratory** | Hours: 10h  
Laboratory classes: 4h  
Self study: 6h |
| - | Hours: 60h  
Self study: 60h |
| **Optional Report: Experimental Errors and significant Figures** | Hours: 4h  
Self study: 4h |
Bibliography

Basic:

Sears, Francis Weston; Zemansky, Mark Waldo; Young, Hugh D. Física universitaria. 6ª ed. México, etc.: Addison-Wesley Iberoamericana, 1988. ISBN 0201640422.


Complementary:

