Degree competences to which the subject contributes

Specific:
1. D6. Ability to analyze and model kinematics and dynamic behavior of mechanical systems.
2. D7. Ability to simulate and design mechanisms as a solution for specific mechanical problems.
3. D8. Ability to dimension and to select machines and structure elements.

Transversal:
5. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

Learning objectives of the subject

When finishing the subject, the student has to be able to:

- Analyze and relate the solicitations, efforts and motion in mechanical systems.
- Analyze and design mechanisms as a result of a specific problem of motion.
- Design resistant machine parts.
- Analyze and design mechanisms with the help of CAE programs.
Study load

<table>
<thead>
<tr>
<th>Content</th>
<th>Hours large group:</th>
<th>Hours medium group:</th>
<th>Hours small group:</th>
<th>Guided activities:</th>
<th>Self study:</th>
<th>Total learning time: 150h</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Kinematic and dynamic analysis of mechanisms.</td>
<td>45h</td>
<td>0h</td>
<td>15h</td>
<td>0h</td>
<td>90h</td>
<td>30.00%</td>
</tr>
<tr>
<td>Learning time: 36h</td>
<td>Theory classes: 11h 15m</td>
<td>Laboratoy classes: 3h 45m</td>
<td>Self study : 21h</td>
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</tbody>
</table>

- Synthesis of Mechanisms.
| Learning time: 36h | Theory classes: 11h 15m | Laboratoy classes: 3h 45m | Self study : 21h |

- Design of machine elements: flywheel (or balance wheel), brakes, clutches, shafts, belts, chains, cams, gears and gear trains.
| Learning time: 36h | Theory classes: 11h 15m | Laboratoy classes: 3h 45m | Self study : 21h |

- Computer aided study of mechanisms.
| Learning time: 36h | Theory classes: 11h 15m | Laboratoy classes: 3h 45m | Self study : 21h |

(ENG) Proves d’avaluació individual
| Learning time: 6h | Guided activities: 6h |
Planning of activities

<table>
<thead>
<tr>
<th>(ENG) A1. AVALUACIÓ DE L'APRENENTATGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ENG) A2. PRÀCTIQUES</td>
</tr>
<tr>
<td>(ENG) A3. PRESENTACIÓ D'INFORMES</td>
</tr>
</tbody>
</table>

Qualification system

Individual written exams throughout the semester: 80%
Assessment of reports of laboratory practice: 15%
Preparation and presentation of papers and reports issued in group: 5%

Bibliography

Basic:


Complementary: