220016 - Mechanics

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 712 - EM - Department of Mechanical Engineering
Academic year: 2019
Degree: BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
ECTS credits: 4,5
Teaching languages: Catalan

Teaching staff
Coordinator: JORDI ROMEU GARBI
Others: JORDI PALMIOLA CREUS - TERESA PAMIES GOMEZ - ANDREU BALASTESEGUI - BEATRIZ PURAS

Degree competences to which the subject contributes

Specific:
2. GrETA/GrEVA - Applied knowledge of materials science and technology; mechanics and thermodynamics; fluid mechanics; aerodynamics and flight mechanics; navigation systems and air traffic; aerospace technology; structural theory; economy and production; projects; environmental impact.

Transversal:
1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

Teaching methodology

The educational methodology is divided into four parts:
- Presencial sessions of contents exhibition
- Presencial sessions of practical work
- Autonomous work of study and realization of exercises and activities
In the content exhibition sessions the teaching staff will introduce the theory bases of the subject, methods, concepts and results with examples of engineer character to facilitate their understanding.
The teaching staff will guide students in the application of the theory concepts for solve problems related with industrial engineering in the sessions of practical work in the classroom. It will purpose exercises which students have to solve in the classroom with partners and the teacher, or out of the classroom, in order to learn the utilization of tools for solving problems.
The autonomous work will consist on problems and conceptual questions which are proposed in the bibliography. They will develop everything what has been seen in the presencial sessions of content exhibition and practical work.

Learning objectives of the subject

The subject introduces to student in applied knowledge of the mechanics and in the concepts and principles which determine the behaviour of the structures with dynamic solicitations on duty.
220016 - Mechanics

## Study load

<table>
<thead>
<tr>
<th>Total learning time: 112h 30m</th>
<th>Hours large group: 31h 27.56%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 14h 12.44%</td>
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<td></td>
<td>Hours small group: 0h 0.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 0h 0.00%</td>
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<tr>
<td></td>
<td>Self study: 67h 30m 60.00%</td>
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<tr>
<td>Content</td>
<td>Learning time:</td>
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<tr>
<td>---------------------------------------------</td>
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</tr>
<tr>
<td><strong>(ENG) -1.1 Cinemàtica partícula</strong></td>
<td>7h</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td></td>
</tr>
<tr>
<td>1.1  Particle kinematics</td>
<td></td>
</tr>
<tr>
<td><strong>(ENG) -1.2 Moviments del Sòlid Rígid</strong></td>
<td>18h 30m</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td></td>
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<tr>
<td><strong>(ENG) -1.3 Sòlids en contacte</strong></td>
<td>20h</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td></td>
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<tr>
<td><strong>(ENG) -1.4 Cinemàtica plana</strong></td>
<td>16h</td>
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<tr>
<td><strong>Description:</strong></td>
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### 1.5 Dinàmica de la partícula

**Learning time:** 5h  
Theory classes: 2h  
Practical classes: 1h  
Self study: 2h

**Description:**  
- 

**Specific objectives:**  
- 

### 1.6 Teoremes de la dinàmica

**Learning time:** 7h  
Theory classes: 2h  
Practical classes: 1h  
Self study: 4h

**Description:**  
- 

**Specific objectives:**  
- 

### 1.7 Inèrcia

**Learning time:** 5h  
Theory classes: 2h  
Practical classes: 1h  
Self study: 2h

**Description:**  
- 

**Specific objectives:**  
- 

### 1.8 Dinàmica del sòlid

**Learning time:** 18h  
Theory classes: 5h  
Practical classes: 2h  
Guided activities: 0h  
Self study: 11h

**Description:**  
-
## Planning of activities

<table>
<thead>
<tr>
<th>(ENG) LARGE GROUP SESSIONS</th>
<th>Hours: 42h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 28h</td>
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<td></td>
<td>Self study: 14h</td>
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<table>
<thead>
<tr>
<th>(ENG) MEDIUM GROUP SESSIONS</th>
<th>Hours: 21h</th>
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<tbody>
<tr>
<td></td>
<td>Practical classes: 14h</td>
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<tr>
<td></td>
<td>Self study: 7h</td>
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<table>
<thead>
<tr>
<th>(ENG) EXAMEN PARCIAL</th>
<th>Hours: 24h 10m</th>
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<tr>
<td></td>
<td>Theory classes: 1h</td>
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<tr>
<td></td>
<td>Self study: 23h 10m</td>
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<table>
<thead>
<tr>
<th>(ENG) FINAL EXAM</th>
<th>Hours: 25h 20m</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 2h</td>
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<tr>
<td></td>
<td>Self study: 23h 20m</td>
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## Qualification system

- Partial examination: 30%
- Final exam: 50%
- Ordinary activities of class (partial): 10%
- Ordinary activities of class (final): 10%

All those students who cannot attend the partial examination or who not pass it, will have the option to recover the note by taking the final exam of the subject. The passing of the final exam with a grade equal to or higher than 5 replaces the partial exam grade with a 5 point qualification.

## Regulations for carrying out activities

The partial and final examination will be individual without material support (notes or books). The ordinary activities will develop in groups with other classmates and teacher but without material support.
Bibliography

Basic:


Complementary:


Others resources:

Audiovisual material

Apunts de Mecànica