820449 - AAMCM - Advanced Computational Mechanics

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 737 - RMEE - Department of Strength of Materials and Structural Engineering
Academic year: 2015
Degree: BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
ECTS credits: 6 Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: Gabriel Bugeda Castelltort
Others: Martín Solina

Degree competences to which the subject contributes

Specific:
2. Understand and apply the fundamentals of the elasticity and strength of materials to the behaviour of real solids.
3. Carry out calculations for the design of industrial structures and buildings.

Transversal:
1. 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.
5. 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.
6. EFFECTIVE USE OF INFORMATION RESOURCES - Level 1. Identifying information needs. Using collections, premises and services that are available for designing and executing simple searches that are suited to the topic.

Learning objectives of the subject

Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 45h</th>
<th>30.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>0h</td>
<td>0.00%</td>
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<tr>
<td>Hours small group:</td>
<td>15h</td>
<td>10.00%</td>
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<tr>
<td>Guided activities:</td>
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<td>0.00%</td>
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<tr>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
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<tr>
<td>Content</td>
<td>Learning time: 20h</td>
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<td>------------------------------------------------------------------------</td>
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<tr>
<td>(ENG) 1</td>
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<tr>
<td>Resol·lució de problemes no lineals</td>
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<tr>
<td>(ENG) 3 Problemes amb no linealitat del material</td>
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<tr>
<td>(ENG) 4 Problemes amb no linealitat geomètrica</td>
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<tr>
<td>(ENG) 5 Problemes amb no linealitat del contorn. Contacte i impacte</td>
<td>40h</td>
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<tr>
<td>(ENG) 6 Aplicacions pràctiques</td>
<td>30h</td>
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Learning time:
- **Theory classes**: 4h
- **Laboratory classes**: 4h
- **Self study**: 12h

- **Theory classes**: 4h
- **Laboratory classes**: 4h
- **Self study**: 12h

- **Theory classes**: 4h
- **Laboratory classes**: 4h
- **Self study**: 12h

- **Theory classes**: 8h
- **Laboratory classes**: 8h
- **Self study**: 24h

- **Theory classes**: 4h
- **Laboratory classes**: 4h
- **Self study**: 22h
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Bibliography

Basic:


Others resources:

Computer material

GiD

Ramseries

Comet