250950 - METNUMEDPS - Numerical Methods for Pdes

Coordinating unit: 250 - ETSECCPB - Barcelona School of Civil Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering
Academic year: 2019
Degree: ERASMUS MUNDUS MASTER'S DEGREE IN COMPUTATIONAL MECHANICS (Syllabus 2013). (Teaching unit Compulsory)
MASTER'S DEGREE IN NUMERICAL METHODS IN ENGINEERING (Syllabus 2012). (Teaching unit Compulsory)
MASTER'S DEGREE IN STRUCTURAL AND CONSTRUCTION ENGINEERING (Syllabus 2009). (Teaching unit Optional)
MASTER'S DEGREE IN STRUCTURAL AND CONSTRUCTION ENGINEERING (Syllabus 2015). (Teaching unit Optional)
ECTS credits: 5 Teaching languages: English

Teaching staff
Coordinator: SERGIO ZLOTNIK MARTINEZ
Others: JOEL MONTOY ALBAREDA, SERGIO ZLOTNIK MARTINEZ

Degree competences to which the subject contributes

Specific:
8380. Materials modeling skills. Ability to acquire knowledge on modern physical models of the science of materials (advanced constitutive models) in solid and fluid mechanics.
8382. Experience in numerical simulations. Acquisition of fluency in modern numerical simulation tools and their application to multidisciplinary problems engineering and applied sciences.
8383. Interpretation of numerical models. Understanding the applicability and limitations of the various computational techniques.
8384. Experience in programming calculation methods. Ability to acquire training in the development and use of existing computational programs as well as pre and post-processors, knowledge of programming languages and standard calculation libraries.

Learning objectives of the subject
### Study load

<table>
<thead>
<tr>
<th></th>
<th>Hours large group:</th>
<th>Hours medium group:</th>
<th>Hours small group:</th>
<th>Guided activities:</th>
<th>Self study:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total learning time:</strong></td>
<td>125h</td>
<td>15h</td>
<td>7h 30m</td>
<td>7h 30m</td>
<td>80h</td>
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<tr>
<td><strong>Learning time:</strong></td>
<td></td>
<td>15h</td>
<td>7h 30m</td>
<td>7h 30m</td>
<td>80h</td>
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### Content

- **Learning time:** 90h  
  Theory classes: 15h  
  Practical classes: 15h  
  Laboratory classes: 7h 30m  
  Self study: 52h 30m

### Bibliography

**Basic:**

