210140 - EST IV - Structures IV

Coordinating unit: 210 - ETSAB - Barcelona School of Architecture
Teaching unit: 753 - TA - Department of Architectural Technology
Academic year: 2018
Degree: DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Teaching unit Compulsory)
ECTS credits: 5

Teaching languages: Catalan, Spanish

Coordinator: ALBERT ALBAREDA VALLS

Others: Primer quadrimestre:
ALBERT ALBAREDA VALLS - 11, 21
JAUME ALENTORN PUIGCERVER - 11, 21
JORDI MARISTANY CARRERAS - 11, 21

Segon quadrimestre:
ALBERT ALBAREDA VALLS - 32, 42
JAUME ALENTORN PUIGCERVER - 32, 42
JORDI MARISTANY CARRERAS - 32, 42

Degree competences to which the subject contributes

Basic:
CB1. Translation from Spanish slope
CB2. Translation from Spanish slope
CB3. Translation from Spanish slope
CB4. Translation from Spanish slope
CB5. Translation from Spanish slope

Specific:
ET1. Translation from Spanish slope
ET13. Translation from Spanish slope
ET14. Translation from Spanish slope
ET10. Translation from Spanish slope
ET2. Translation from Spanish slope
ET3. Translation from Spanish slope
ET4. Translation from Spanish slope
ET6. Translation from Spanish slope
Learning objectives of the subject

To achieve the necessary principles to understand the mechanical behaviour of the soil.

To comprehend the forces which arrive to the soil derived from a building, making compatible structure and foundations.

To comprehend the geotechnical studies of the ground in order to be able to decide the typology of foundation and to calculate it.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 125h</th>
<th>Hours large group:</th>
<th>21h</th>
<th>16.80%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>22h</td>
<td>17.60%</td>
</tr>
<tr>
<td></td>
<td>Hours small group:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities:</td>
<td>12h</td>
<td>9.60%</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>70h</td>
<td>56.00%</td>
</tr>
</tbody>
</table>
## Content

<table>
<thead>
<tr>
<th>Structures IV</th>
<th>Learning time: 4h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 2h</td>
</tr>
<tr>
<td></td>
<td>Practical classes: 2h</td>
</tr>
</tbody>
</table>

### Description:
- Introduction to the soil mechanics.
- Classification and physical properties of the soil.
- Introduction to the elasticity and plasticity theory.
- Mechanical tests in laboratory.
- Rankine and Coulomb Equilibrium.
- Retaining walls.
- Slope Stability.
- In situ mechanical tests.
- Superficial foundations, strength.
- Deep foundations.

### Qualification system

Go to catalan or spanish version.

### Bibliography

**Basic:**
