Degree competences to which the subject contributes

Generical:
1. The ability to communicate effectively orally and in writing.
2. The ability to summarise and think critically. The ability to adapt to new technologies.

Teaching methodology

The teaching method consists in the professors presenting the topics using the materials that are available on the ATENEA virtual campus. The materials contain a large number of links to web pages belonging to companies and public administrations on the topics. Students must complete the information given in class with the information on these web pages.

Exercises are generally completed in class in small groups and are subject to continuous assessment.

Field trips organised to study real cases are also subject to continuous assessment.

Learning objectives of the subject

1. To present water, one of the natural resources that is most relevant and most current, from a global perspective.
2. To explain various domestic and industrial forms of water treatment, with an emphasis on optimising its use.
3. To introduce students to the study of groundwater.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 45h</th>
<th>Hours large group:</th>
<th>30h</th>
<th>66.67%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>15h</td>
<td>33.33%</td>
</tr>
</tbody>
</table>
33106 - AR - Water as a Resource

Content

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Learning time: 45h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>Theory classes: 30h</td>
</tr>
<tr>
<td>1. Water: a limited resource. The Earth's water</td>
<td>Practical classes: 15h</td>
</tr>
<tr>
<td>2. Characteristics and properties of water</td>
<td></td>
</tr>
<tr>
<td>3. The water cycle</td>
<td></td>
</tr>
<tr>
<td>4. Origin, measurement and management of surface water</td>
<td></td>
</tr>
<tr>
<td>5. Groundwater: hydrogeological and hydrogeochemical behaviour, pollution</td>
<td></td>
</tr>
<tr>
<td>6. Treating water for human consumption and industry</td>
<td></td>
</tr>
<tr>
<td>7. Treatments for obtaining drinking water: drinking water treatment plants</td>
<td></td>
</tr>
<tr>
<td>8. Treatments for water in industry: water in boilers and cooling circuits</td>
<td></td>
</tr>
<tr>
<td>9. Reverse osmosis treatments</td>
<td></td>
</tr>
<tr>
<td>10. Optimisation techniques for water use and saving</td>
<td></td>
</tr>
</tbody>
</table>

Qualification system

Face-to-face assessment system:
- Written test (40%)
- Internet research and oral presentation of detailed information on a chosen topic (30%)
- Exercises (20%)
- Visits (10%)

Blended-learning assessment system:
- Written test (40%)
- Internet research and oral presentation of detailed information on a chosen topic (20%)
- Exercises (30%)
- Visits (10%)
Bibliography

Basic:


