310631 - Spatial Databases

Coordinating unit: 310 - EPSEB - Barcelona School of Building Construction
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering
Academic year: 2018
Degree: BACHELOR’S DEGREE IN GEOINFORMATION AND GEOMATICS ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
ECTS credits: 4.5  Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: Nuñez Andres, Maria Amparo
Others: Nuñez Andres, Maria Amparo
Gonzalez Gonzalez, Juan Carlos

Prior skills
Database for SIG

Teaching methodology
Expositive-participatory classes
Practices

Learning objectives of the subject
Know how to create a spacial database in PostGIS
Know the basic types of geometry in PostGIS. Know the constructors in geometry.
Know, create and insert geometries

Study load

<table>
<thead>
<tr>
<th>Total learning time: 112h 30m</th>
<th>Hours large group: 18h</th>
<th>16.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 27h</td>
<td>24.00%</td>
</tr>
<tr>
<td></td>
<td>Self study: 67h 30m</td>
<td>60.00%</td>
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</tbody>
</table>
# 310631 - Spatial Databases

## Content

| Introduction | **Learning time:** 15h  
Theory classes: 4h  
Practical classes: 4h  
Self study : 7h |
| --- | --- |
| **Description:**  
Related regulations  
Postgre and Postgis  
SQL language: definition and manipulation of data | |
| **Related activities:**  
Activity 1  
Activity 2 |

| Spacial database | **Learning time:** 14h  
Theory classes: 2h  
Practical classes: 5h  
Self study : 7h |
| --- | --- |
| **Description:**  
Creation of a spatial database  
Reference systems  
Erased of the databased  
Geometry types | |
| **Related activities:**  
Activity 1  
Activity 4 |

| Basic geometrics | **Learning time:** 12h  
Theory classes: 1h  
Practical classes: 4h  
Self study : 7h |
| --- | --- |
| **Description:**  
Definition of basic geometries  
Dimension of a geometry  
Subconsults in PostGIS | |
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<table>
<thead>
<tr>
<th>Spatial relations</th>
<th>Learning time: 19h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>Use of patterns</td>
</tr>
<tr>
<td></td>
<td>Spatial predicates</td>
</tr>
<tr>
<td></td>
<td>Spatial concatenations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management of results</th>
<th>Learning time: 13h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>Storage and management of results</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indexing</th>
<th>Learning time: 9h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description:</td>
<td>Indexing</td>
</tr>
</tbody>
</table>

- Theory classes: 3h  
- Practical classes: 7h  
- Self study: 9h

- Theory classes: 1h  
- Practical classes: 3h  
- Guided activities: 9h

- Theory classes: 1h  
- Practical classes: 2h  
- Self study: 6h
### Planning of activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity 1</strong></td>
<td>10h 30m</td>
<td><strong>Description:</strong> Midterm exam</td>
</tr>
<tr>
<td><strong>Activity 2</strong></td>
<td>10h 30m</td>
<td><strong>Description:</strong> Midterm exam</td>
</tr>
<tr>
<td><strong>Activity 3</strong></td>
<td>2h</td>
<td><strong>Hours:</strong> 2h</td>
</tr>
<tr>
<td><strong>Activity 4</strong></td>
<td>1h</td>
<td><strong>Description:</strong> Creation and consults in spatial tables</td>
</tr>
<tr>
<td></td>
<td>Theory classes: 1h 30m</td>
<td>Realization of SQL consults</td>
</tr>
<tr>
<td></td>
<td>Self study: 9h</td>
<td>Executed sentence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Solution</td>
</tr>
<tr>
<td></td>
<td>Theory classes: 1h 30m</td>
<td>Practical classes: 2h</td>
</tr>
<tr>
<td></td>
<td>Self study: 9h</td>
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### Qualification system

Two written individual exams of 40% for each one of them
Practices carried out in class 20%

### Regulations for carrying out activities

All the practices must be delivered and the exams must be carried out in order to pass the subject
At the retake exam can only attend the students that have done all the exams and with a mark greater than a 3,5
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Bibliography

Basic:


Others resources: