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 GEOSCIENCE AND REMOTE SENSING (Syllabus 2016).
ECTS credits: 4.5
Teaching languages: Catalan, Spanish

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 spatial 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>
</tr>
</tbody>
</table>
# 310631 - Spatial Databases

## Content

<table>
<thead>
<tr>
<th><strong>Introduction</strong></th>
<th><strong>Learning time:</strong> 15h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 4h</td>
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<tr>
<td></td>
<td>Practical classes: 4h</td>
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<tr>
<td></td>
<td>Self study : 7h</td>
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</tbody>
</table>

**Description:**
- Related regulations
- Postgre and Postgis
- SQL language: definition and manipulation of data

**Related activities:**
- Activity 1
- Activity 2

<table>
<thead>
<tr>
<th><strong>Spatial database</strong></th>
<th><strong>Learning time:</strong> 14h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 2h</td>
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<tr>
<td></td>
<td>Practical classes: 5h</td>
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<td></td>
<td>Self study : 7h</td>
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</table>

**Description:**
- Creation of a spatial database
- Reference systems
- Erased of the database
- Geometry types

**Related activities:**
- Activity 1
- Activity 4

<table>
<thead>
<tr>
<th><strong>Basic geometrics</strong></th>
<th><strong>Learning time:</strong> 12h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 1h</td>
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<tr>
<td></td>
<td>Practical classes: 4h</td>
</tr>
<tr>
<td></td>
<td>Self study : 7h</td>
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</tbody>
</table>

**Description:**
- Definition of basic geometries
- Dimension of a geometry
- Subconsults in PostGIS
### Spatial relations

**Description:**
- Use of patterns
- Spatial predicates
- Spatial concatenations

**Learning time:** 19h
- Theory classes: 3h
- Practical classes: 7h
- Self study: 9h

### Management of results

**Description:**
- Storage and management of results

**Learning time:** 13h
- Theory classes: 1h
- Practical classes: 3h
- Guided activities: 9h

### Indexing

**Description:**
- Indexing

**Learning time:** 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>
</table>
| **Activity 1** | 10h 30m | Theory classes: 1h 30m  
Self study: 9h |
| **Activity 2** | 10h 30m | Theory classes: 1h 30m  
Self study: 9h |
| **Activity 3** | 2h | Practical classes: 2h |
| **Activity 4** | 1h | Practical classes: 1h |

**Description:**
- **Midterm exam**
- **Realization of SQL consults**

**Descriptions of the assignments due and their relation to the assessment:**
- Executed sentence
- Solution

**Hours:**
- Theory classes: 1h 30m
- Self study: 9h
- Practical classes: 2h
- Practical classes: 1h

### 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: