Course guide
310631 - 310631 - Spatial Databases

Unit in charge: Barcelona School of Building Construction
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.
Degree: BACHELOR’S DEGREE IN GEOINFORMATION AND GEOMATICS ENGINEERING (Syllabus 2016). (Compulsory subject).
Academic year: 2022  ECTS Credits: 4.5  Languages: Catalan, Spanish

LECTURER
Coordinating lecturer: 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>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>18,0</td>
<td>16.00</td>
</tr>
<tr>
<td>Self study</td>
<td>67,5</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>27,0</td>
<td>24.00</td>
</tr>
</tbody>
</table>

Total learning time: 112.5 h
## CONTENTS

### Introduction

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

**Related activities:**
Activity 1  
Activity 2

**Full-or-part-time:** 15h  
Theory classes: 4h  
Practical classes: 4h  
Self study: 7h

### Spatial database

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

**Related activities:**
Activity 1  
Activity 4

**Full-or-part-time:** 14h  
Theory classes: 2h  
Practical classes: 5h  
Self study: 7h

### Basic geometrics

**Description:**
Definition of basic geometries  
Dimension of a geometry  
Subconsults in PostGIS

**Full-or-part-time:** 12h  
Theory classes: 1h  
Practical classes: 4h  
Self study: 7h
## Spatial relations

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

**Full-or-part-time:** 19h
Theory classes: 3h
Practical classes: 7h
Self study: 9h

## Management of results

**Description:**
Storage and management of results

**Full-or-part-time:** 13h
Theory classes: 1h
Practical classes: 3h
Guided activities: 9h

## Indexing

**Description:**
Indexing

**Full-or-part-time:** 9h
Theory classes: 1h
Practical classes: 2h
Self study: 6h

## ACTIVITIES

### Activity 1

**Description:**
Midterm exam 15th March.

**Full-or-part-time:** 8h 50m
Theory classes: 1h 30m
Self study: 7h 20m

### Activity 2

**Description:**
Midterm exam 26th Abril.

**Full-or-part-time:** 10h 30m
Theory classes: 1h 30m
Self study: 9h
Activity 3

Description:
Realization of SQL consults

Delivery:
Executed sentence
Solution

Full-or-part-time: 2h
Practical classes: 2h

Activity 4

Description:
Creation and consults in spatial tables

Full-or-part-time: 1h
Practical classes: 1h

Activity 5

Description:
Midterm exam 2nd June

Full-or-part-time: 3h 30m
Theory classes: 1h 30m
Self study: 2h

GRADING SYSTEM

Three written individual exams of 20%, 30% and 30% for each one of them
Practices carried out in class 20%

EXAMINATION RULES.

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

BIBLIOGRAPHY

Basic: