

Course guide 310631 - 310631 - Spatial Databases

Last modified: 10/02/2025

Unit in charge: Teaching unit:	Barcelona School of Building Construction 751 - DECA - Department of Civil and Environmental Engineering.		
Degree:	BACHELOR'S DEGREE IN GEOINFORMATION AND GEOMATICS ENGINEERING (Syllabus 2016). (Compulsory subject).		
Academic year: 2024	ECTS Credits: 4.5	Languages: Catalan, Spanish	

LECTURER		
Coordinating lecturer:	Nuñez Andres, Maria Amparo	
Others:	Nuñez Andres, Maria Amparo Gonzalez Gonzalez, Juan Carlos Pallàs Del Río, Jordi	

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 how to create and insert geometries.

STUDY LOAD

Туре	Hours	Percentage
Hours large group	18,0	16.00
Hours medium group	27,0	24.00
Self study	67,5	60.00

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

Spacial databse

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 paterns 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 Self study: 7h 20m Theory classes: 1h 30m

Activity 2

Description: Midterm exam 26th Abril.

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



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 Self study: 2h Theory classes: 1h 30m

GRADING SYSTEM

Three written individual exams of 10%, 37.5% and 37.5% for each one of them respectively. Practices and activities carried out in class 15%.

EXAMINATION RULES.

All practices must be handed in and all exams must be taken in order to pass the course. The re-evaluation can only be taken by students who have taken all the exams and have a grade higher than 3.5. The re-evaluation exam will be of the whole subject. The final grade will be the one obtained in this exam for the students who go to re-evaluation.

BIBLIOGRAPHY

Basic:

- Martínez Llario, José Carlos. Talleres prácticos de iniciación a PostGis (Linux y PostgreSQL). València: Editorial de la UPV, 2008. ISBN 9788483632550.

- Martínez Llario, José Carlos. PostGIS 2 : análisis espacial avanzado. València: Editorial de la UPV, 2012. ISBN 9788461588336.