Course guide
310631 - 310631 - Spatial Databases

Last modified: 15/01/2024

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: 2023 **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, create and insert geometries

STUDY LOAD

Type	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
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 15%, 35% and 35% for each one of them
Practices carried out in class 15%. The submission of all the practices in time will be mandatory, if not it will be marked as NP.

EXAMINATION RULES.

All practicals 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, having taken all the exams, 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.