Course guide
310639 - 310639 - Gis Project Design and Management

Last modified: 06/06/2024

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). (Optional subject).

Academic year: 2024 **ECTS Credits:** 4.5 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Mercedes Sanz Conde

Others: Ramiro Marco Figuera
Neus Querol Vidal

PRIOR SKILLS

Solvent use of information with GIS. Deepen the capture, manipulation, analysis and representation of networked data.
Expand Knowledge in the realization of a GIS project.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CE9EGG. (ENG) Coneixement, utilització i aplicació de les tècniques de tractament. Anàlisi de dades espacials. Estudi de models aplicats a l'enginyeria i arquitectura. (Mòdul comú a la branca Topografia)
CE11EGG. Design, production and difusion of the basic cartography; implementation, management and explotation of Geographic Information Systems (SIG).
CE18EGG. Knowledge and management in interdisciplinary teams in Special Data of Infrastructures

Generical:
CG7EGG. Management and execution of investigation projects, developement and innovation inside the scope of this engineering.

Transversal:
CT3. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

CT5. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.

Basic:
CB4EGG. The students must know how to transmit information, ideas, problems and solutions to a specialized but also to a non-specialized public.
CB5EGG. The students have developed these knowledge abilities necessary to undertake later studies with a big grade of autonomy.

TEACHING METHODOLOGY

Master classes
Participative expository classes
Laboratory practices
Autonomous work
Teamwork

LEARNING OBJECTIVES OF THE SUBJECT

Deepen in the capture, manipulation, analysis and representation of data in network.
Develop a GIS project .

STUDY LOAD

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

Total learning time: 112.5 h

CONTENTS

Theme1. Tools for tracking a project.

Description:
Learning different project management tools.

Specific objectives:
Project management software learning.

Related activities:
Activity 1

Full-or-part-time: 15h
Practical classes: 5h
Laboratory classes: 5h
Self study : 5h

Theme 2. Realization of the SIG I project.

Description:
Develop a raster GIS project with Python.

Specific objectives:
Using different Python modules to analyze and calculate parameters.

Related activities:
Activity 2

Full-or-part-time: 16h
Practical classes: 5h
Laboratory classes: 5h
Self study : 6h

Theme 3. Develop GIS II project.

Description:
Developing a project using QGIS.

Specific objectives:
Use of GIS specific modules for route analysis.

Related activities:
Activity 3

Full-or-part-time: 15h
Practical classes: 5h
Laboratory classes: 5h
Self study : 5h

Theme 4. Phases of a SIG project.

Description:
Study of the phases of a project to implement GIS.

Specific objectives:
Know and apply the main regulations governing the management of projects in general and GIS in particular.

Related activities:
Activity 4

Full-or-part-time: 16h
Practical classes: 4h
Laboratory classes: 4h
Self study : 8h

GRADING SYSTEM

GIS I project 35%
GIS II project 35%
Delivery practices and work 20%
Attend a class, technical conferences 10%

EXAMINATION RULES.

All tests are mandatory

BIBLIOGRAPHY

Basic:
- Tutorial Online de QGIS [on line]. Available on: https://docs.qgis.org/3.4/es/docs/training_manual.- Programari Gestió de projects Online [on line]. Available on: https://www.eaeprogramas.es/empresa-familiar/10-softwares-gratuitos-para-gestionar-proyectos.- Documentació Rasterio Online [on line]. Available on: https://rasterio.readthedocs.io/en/latest/.- Ander Egg, E.; Aguilar, M.J:. Cómo elaborar un proyecto [on line]. Buenos Aires: Instituto de Ciencias Sociales Aplicadas
, 1989 [Consultation: 20/07/2016]. Available on: http://www.inau.gub.uy/biblioteca/elaboracion%20de%20proyecto.pdf. ISBN 950-582-256-2.
- Olaya, Víctor. Sistemas de información geográfica [on line]. OsGeo, 2012 [Consultation: 09/06/2020]. Available on: ttp://volaya.github.io/libro-sig/.

RESOURCES

Computer material:
- OpenProj. Software
- QGIS. Software
- ArcGIS. Software