

Course guide

310644 - 310644 - Programming for Geoinformation Applications

Last modified: 15/05/2023

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:	2023	ECTS Credits:	4.5
		Languages:	Catalan, Spanish

LECTURER

Coordinating lecturer: Gonzalez Gonzalez, Juan Carlos

Others:

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 diffusion of the basic cartography; implementation, management and exploitation of Geographic Information Systems (SIG).

Generical:

CG6EGG. Reunite and interpret information of the ground and all of this geographic and economically related with the ground.

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.

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.

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.

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

Participatory lecture classes.

Practical classes.

LEARNING OBJECTIVES OF THE SUBJECT

1. Geoprocessing programming with Python.
2. Web applications and App development with and mobile API's.

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

Geoprocessing automation

Description:

Design, development and implementation of geoprocessing models with Python.

Specific objectives:

1. Design of geoprocessing models.
2. Learning Python language.

Full-or-part-time: 41h 15m

Theory classes: 20h

Self study : 21h 15m

Application programming

Description:

Design and development of Web GIS applications with libraries and mobile Apps with native libraries.

Specific objectives:

1. Programming and HTML5 applications.
2. Programming with the ESRI Android SDK and AppStudio for ArcGIS.

Full-or-part-time: 41h 15m

Theory classes: 20h

Self study : 21h 15m

GRADING SYSTEM

Two mid-term exams and two programming activities.

Students could apply for re-evaluation exams in case they exceed the 3.5 average grade on the matter. The exams will allow the recovery of mid-term exams that are not approved.

BIBLIOGRAPHY

Basic:

- Fu,Pinde. Getting to Know Web GIS [on line]. Redlands, Calif: ESRI Press, 2015 [Consultation: 03/06/2020]. Available on: <https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=3238286>. ISBN 9781589483842.