310639 - Gis Project Design and Management

Coordinating unit: 310 - EPSEB - Barcelona School of Building Construction
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering
Academic year: 2019
Degree: BACHELOR'S DEGREE IN GEOINFORMATION AND GEOMATICS ENGINEERING (Syllabus 2016). (Teaching unit Optional)
ECTS credits: 4.5  Teaching languages: Spanish

Teaching staff
Coordinator: Mercedes Sanz Conde
Others: Mercedes Sanz Conde

Opening hours
Timetable: Website

Prior skills
Solvent use of information with GIS.

Degree competences to which the subject contributes

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.

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).
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.
310639 - Gis Project Design and Management

Teaching methodology

Master class
Laboratory
Team work

Learning objectives of the subject

Deepen in the capture, manipulation, analysis and representation of data 3D and in network. Develop a GIS project.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 112h 30m</th>
<th>Hours large group: 18h</th>
<th>16.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>27h</td>
<td>24.00%</td>
</tr>
<tr>
<td>Hours small group:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td>Self study:</td>
<td>67h 30m</td>
<td>60.00%</td>
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</tbody>
</table>
### Theme 1. Treatment and analysis of data 3D in a GIS

**Description:** Capture, manipulation, analysis, modeling and representation of 3D data.

**Related activities:**
- Activity 1

**Specific objectives:** Learning of specific modules of a GIS for the treatment of 3D data.

**Learning time:** 15h
- Practical classes: 5h
- Laboratory classes: 5h
- Self study: 5h

### Theme 1. Treatment and analysis of network data in a GIS

**Description:** Capture, management, analysis, modeling and representation of data in network.

**Related activities:**
- Activity 2

**Specific objectives:** Learning of specific modules of a GIS for the treatment of network data.

**Learning time:** 15h
- Practical classes: 5h
- Laboratory classes: 5h
- Self study: 5h

### Theme 3. Introduction to ArcGIS PRO

**Description:** Learning of ArcGIS PRO software

**Related activities:**
- Activity 3

**Learning time:** 15h
- Practical classes: 5h
- Laboratory classes: 5h
- Self study: 5h
### Theme 4. Phases of a SIG project

<table>
<thead>
<tr>
<th>Learning time: 18h</th>
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</thead>
<tbody>
<tr>
<td>Practical classes: 4h</td>
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<tr>
<td>Laboratory classes: 4h</td>
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<tr>
<td>Self study: 10h</td>
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</tbody>
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### Description:
Study of the phases of a project to implement GIS.

### Related activities:
Activity 4

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

| 3D Analyst | **Hours**: 20h  
Laboratory classes: 5h  
Practical classes: 5h  
Self study: 10h |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Description</strong>:</td>
<td>Learning of 3D Analyst software</td>
</tr>
<tr>
<td><strong>Support materials</strong>:</td>
<td>Extension ArcGIS: 3D Analyst</td>
</tr>
<tr>
<td><strong>Descriptions of the assignments due and their relation to the assessment</strong>:</td>
<td>Delivery of practice and report</td>
</tr>
</tbody>
</table>

| Analysis data geographic in network. | **Hours**: 20h  
Laboratory classes: 5h  
Practical classes: 5h  
Self study: 10h |
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<tbody>
<tr>
<td><strong>Description</strong>:</td>
<td>Learning Network Analyst software</td>
</tr>
<tr>
<td><strong>Support materials</strong>:</td>
<td>Software ArcGIS: Network Analyst</td>
</tr>
<tr>
<td><strong>Descriptions of the assignments due and their relation to the assessment</strong>:</td>
<td>Practice and report delivery</td>
</tr>
</tbody>
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| ArcGIS PRO | **Hours**: 20h  
Laboratory classes: 5h  
Practical classes: 5h  
Self study: 10h |
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<tbody>
<tr>
<td><strong>Description</strong>:</td>
<td>Learning ArcGIS PRO</td>
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<tr>
<td><strong>Support materials</strong>:</td>
<td>ArcGIS PRO</td>
</tr>
<tr>
<td><strong>Descriptions of the assignments due and their relation to the assessment</strong>:</td>
<td>Delivery of practice</td>
</tr>
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| GIS project | **Hours**: 20h  
Laboratory classes: 5h  
Practical classes: 5h  
Self study: 10h |
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<tbody>
<tr>
<td><strong>Description</strong>:</td>
<td>Development of a GIS project</td>
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Support materials:
Documentation to develop a project

Descriptions of the assignments due and their relation to the assessment:
Work on a project

Qualification system
Theme 1: Theoretical/practical exam, 20%
Theme 2: Theoretical / practical exam, 20%
Theme 3: Theoretical/practical exam, 20%
A GIS project, 25%
Delivery practices and work, attend a class, technical conferences, 15%

Regulations for carrying out activities
All tests are mandatory

Bibliography

Basic:


Others resources:

Computer material
ArcGIS for Desktop
Software

ArcGIS PRO
Software