Course guide
2500035 - GECISOCOPB - Sustainability, Social and Environmental Impact

Unit in charge: Barcelona School of Civil Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.
Degree: BACHELOR'S DEGREE IN CIVIL ENGINEERING (Syllabus 2020). (Optional subject).
Academic year: 2022  ECTS Credits: 4.5  Languages: Catalan

LECTURER
Coordinating lecturer: MIRIAM VILLARES JUNYENT
Others: ELISABETH ROCA BOSCH, MIRIAM VILLARES JUNYENT

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
14406. Ability to analyze the problem of safety and health in construction sites. (Common module to the Civil branch)
14410. Knowledge of the typology and calculation bases of prefabricated elements and their application in manufacturing processes. (Specific technology module: Civil Construction)
14411. Knowledge about the project, calculation, construction and maintenance of building works in terms of structure, finishes, facilities and own equipment. (Specific technology module: Civil Construction)
14413. Capacity for the construction and conservation of roads, as well as for the dimensioning, the project and the elements that make up the basic road equipment. (Specific technology module: Civil Construction)
14414. Capacity for the construction and conservation of railway lines with knowledge to apply specific technical regulations and differentiating the characteristics of the mobile material. (Specific technology module: Civil Construction)
14415. Ability to apply construction procedures, construction machinery and construction planning techniques. (Specific technology module: Civil Construction)
14416. Capacity for the construction of geotechnical works. (Specific technology module: Civil Construction)

TEACHING METHODOLOGY

The course consists of 1.5 hours per week of classroom activity (large size group) and 1.5 hours weekly with half the students (medium size group).

The 1.5 hours in the large size groups are devoted to theoretical lectures, in which the teacher presents the basic concepts and topics of the subject, shows examples and solves exercises.

The 1.5 hours in the medium size groups is devoted to solving practical problems with greater interaction with the students. The objective of these practical exercises is to consolidate the general and specific learning objectives.

Support material in the form of a detailed teaching plan is provided using the virtual campus ATENEA: content, program of learning and assessment activities conducted and literature.
LEARNING OBJECTIVES OF THE SUBJECT

Definition and concept of social-environmental impact. Methods of evaluating socio-environmental impact. Socio-environmental problems in the urban and territorial environment. Case studies, framed in urban and territorial areas and linked to transformations in planning: coastal spaces, open spaces, urbanization, road infrastructures.

1 Ability to assess the social impact of an infrastructure and the modifying effect it produces in the territory.

Provide the student with basic knowledge about the social impact of public works from the different analysis methods and case studies. Understand the basic concepts that are used in the field of urban planning and civil engineering. Know the main effects of infrastructures in the urban environment and understand the modifying effect that infrastructures produce on the territory, potentials and weaknesses of the cause-effect relationship.

Provide students with basic knowledge about the social impact of public works from the different methods of analysis and case studies. Understand the basic concepts used in the field of urban planning and civil engineering.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Hours large group</td>
<td>22.5</td>
<td>20.00</td>
</tr>
<tr>
<td>Guided activities</td>
<td>4.5</td>
<td>4.00</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>22.5</td>
<td>20.00</td>
</tr>
<tr>
<td>Self study</td>
<td>63.0</td>
<td>56.00</td>
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</tbody>
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Total learning time: 112.5 h

CONTENTS

The concept and evolution of social impact

Description: The definition and concept of social impact. The social perception of impacts. The historical and territorial context of social awareness. The content of impact assessment studies. The evaluation of the social and urban aspects. Valuation methods: quantitative and qualitative.

Specific objectives: To introduce the subject. Understand the transformative potential of public works on the territory and society. To make it known in the historical context from the second half of the 20th century to the present day. To make students understand the impact of public works projects on the physical, social and environmental environment from the different methods of quantitative and qualitative assessment. Explain the main valuation methods. Understand the administrative procedure of current regulations.

Full-or-part-time: 28h 47m

Theory classes: 8h
Practical classes: 4h
Self study: 16h 47m
SOCIO-ENVIRONMENTAL IMPACTS ON THE URBAN ENVIRONMENT

Description:
The impacts on the population, on the landscape of the city, on the environment and its balance, on mobility, on services and equipment. The effects linked to the period of works

Objectives:
To understand and reflect on the effects of the infrastructures in the city.

Specific objectives:
Objectives To understand and reflect on the effects of infrastructures in the city
Objectives To understand the transformative effect of infrastructures in the city
Objectives To analyze and to value the changes that produce the great infrastructures in the urban weave

Full-or-part-time: 24h
Theory classes: 10h
Self study: 14h

THE SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF INFRASTRUCTURES ON THE TERRITORY

Description:
The direct effects in the period of works and in the operation of the infrastructures. The effects induced in the economic activities and the sector of the production (the industrial location, the creation of technological parks, the tertiary and commercial location, the transformations in the agricultural sector, in the tourism sector). Impacts on city hierarchy and residential expansion / concentration.

Objectives:
To understand the modifying effect that the infrastructures produce on the territory, potentialities and weaknesses of the relation cause effect.

Specific objectives:
Objectives To understand the modifying effect that the infrastructures produce on the territory, potentialities and weaknesses of the relation cause effect.
Objectives: to understand the modifying effects on the territory
Objectives To understand the modifying effect that the interventions and technical actions produce on the open spaces, potentialities and weaknesses of the relation cause effect.

Full-or-part-time: 28h 47m
Theory classes: 12h
Self study: 16h 47m
**ACTIVITIES**

**Description:**
Knowledge of the population. Assessment Activity Description Assessment exercise Objectives Assess knowledge

**Specific objectives:**
Objectives To assess knowledge

**Full-or-part-time:** 26h 24m
Laboratory classes: 11h
Self study : 15h 24m

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**GRADING SYSTEM**

The mark of the course is obtained from the ratings of continuous assessment and their corresponding laboratories and/or classroom computers.

Continuous assessment consist in several activities, both individually and in group, of additive and training characteristics, carried out during the year (both in and out of the classroom).

The teachings of the laboratory grade is the average in such activities.

The evaluation tests consist of a part with questions about concepts associated with the learning objectives of the course with regard to knowledge or understanding, and a part with a set of application exercises.

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**BIBLIOGRAPHY**

**Basic:**

**Complementary:**
  - [http://territori.scot.cat/](http://territori.scot.cat/)