Course guide
250008 - GECELEGCON - Business and Construction Legislation

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). (Compulsory subject).
Academic year: 2022 ECTS Credits: 6.0 Languages: Catalan, English

LECTURER
Coordinating lecturer: ÁLVARO GAROLA CRESPO
Others: ÁLVARO GAROLA CRESPO, SERGI SAURI MARCHAN, GEMA VELEZ SABATER

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
14397. Adequate knowledge of the company concept, institutional and legal framework of the company. Organization and business management. (Basic training module)

Generical:
14380. Scientific-technical training for the exercise of the profession of Technical Engineer of Public Works and knowledge of the functions of advice, analysis, design, calculation, project, construction, maintenance, conservation and exploitation.
14382. Knowledge, understanding and ability to apply the necessary legislation during the exercise of the profession of Technical Engineer of Public Works.
14388. Knowledge and ability to apply business management techniques and labor legislation.

TEACHING METHODOLOGY
The course consists of 2 hours per week of classroom activity (large size group) and 2 hours weekly with half the students (medium size group).

The 2 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 2 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


1 Ability to conduct an economic feasibility study for investment in the construction of an infrastructure.
2 Ability to perform an economic operation analysis of a construction firm.
3 Ability to conduct a study of economic profitability of operation, maintenance and conservation of an infrastructure.


Concept of financial profitability. Infrastructure investment viability plans. Investment concept. Phases of the project. Factors that condition the return on an investment from an economic and financial point of view. Define the financial criteria that define the viability of a project such as IRR and NPV.

Investment selection criteria. Introduction to cost-benefit analysis methodology.
Economic analysis of environmental impacts. Concept of externality and its measurement.
Legislation on public procurement. Work award criteria. Legislation on public works concessions.

1 Ability to conduct an economic feasibility study for investment in the construction of an infrastructure. 2 Ability to perform an analysis of the economic operation of a construction firm. 3 Ability to analyze the impact of infrastructures. 4 Understand the concept of efficiency applied to business, infrastructure and construction. 5 Ability to understand the concession model and the legislation that regulates it. Adequate knowledge of the concept of company, institutional and legal framework of the company. Business organization and management. Knowledge of economics including analysis of productive activity, the law of supply and demand, production and income. Knowledge of monetary and financial economics both nationally and internationally. Knowledge of market economy, growth models, productive economy. Knowledge of regional economy and the role of infrastructure. Knowledge of the economy of the environment and its management. Company knowledge including type of companies, authority in the company, management, administration and organization. Knowledge of company resources, financing, investments, securities. Knowledge of production, supply and demand, promotion and distribution, remuneration for work. Infrastructure financing. Public and private sources. Public sector as an economic agent. Economic impact of infrastructures. Methods of analysis. Concept of financial profitability. Feasibility plans for infrastructure investments. Investment concept. Phases of the project. Factors that condition the return on an investment from an economic and financial point of view. Define the financial criteria that define the viability of a project such as the IRR and the NPV.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study</td>
<td>84,0</td>
<td>56.00</td>
</tr>
<tr>
<td>Guided activities</td>
<td>6,0</td>
<td>4.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>30,0</td>
<td>20.00</td>
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Total learning time: 150 h
## Introduction to economics and fundamentals of microeconomics

**Description:**
Concept of economy. Basic principles that govern economic thinking. Basis of economic analysis

**Specific objectives:**
Understand the basic elements of economic analysis and its application to the world of construction and civil engineering
Understand the fundamentals of microeconomics and its application to civil engineering and construction. Introduce the concept of efficiency

**Full-or-part-time:** 9h 36m
Theory classes: 4h
Self study: 5h 36m

## Economy of the construction sector

**Description:**

**Specific objectives:**
Understand the particularities of construction as a productive sector. Know the recent evolution of the sector and its perspectives

**Full-or-part-time:** 9h 36m
Theory classes: 4h
Self study: 5h 36m

## Business economics

**Description:**
Concept of company, and the various types. Type of company, limited and limited liability, concept of share capital. Basic elements of business management. Corporate Social Responsibility. Characteristics and particularities of construction companies.

**Specific objectives:**
Understand the different types of companies Introduce the concept of economic responsibility of the company Introduce the concept of social responsibility Particularities of construction companies

**Full-or-part-time:** 9h 36m
Theory classes: 4h
Self study: 5h 36m
Introduction to Accounting

Description:

Specific objectives:
Understand that accounting is the way to analyze a company financially. Understand the accounting accounts. Learn to interpret the accounts of a company. Assess the economic operation of a company. Understand the ratios that allow you to analyze the behavior of a company. Identify the differences between the accounting view and cash flows. Practice compatible techniques. Interpret and compare business results.

Full-or-part-time: 28h 47m
Theory classes: 6h
Practical classes: 6h
Self study: 16h 47m

Infrastructure economics

Description:
Sources of infrastructure financing. Public funding: classical method, shadow toll, right of use. Taxes as investment financiers. Financing with urban operations. Private financing. Payment by the user. Infrastructure prices as regulators of demand. Effects on equity. Investment concept. Phases of the project. Factors that condition the return on an investment from an economic and financial point of view. Define the financial criteria that define the viability of a project such as the IRR and the NPV. Sources of funding. Recent and real cases of investment projects in the infrastructure sector. Calculate its viability.

Specific objectives:
Understand ways to finance infrastructure. Discuss the role of the public sector and the private sector in infrastructure. Understand the concepts of return on investment. Learn the tools to assess their viability. Discuss the various ways to obtain resources. That students draw up an Economic and Financial Plan based on real cases. Assess the elements that make an infrastructure profitable. Discuss why certain investment actions are carried out.

Full-or-part-time: 38h 24m
Theory classes: 8h
Practical classes: 8h
Self study: 22h 24m
Macroeconomic impact of infrastructures

Description:
Impact of real infrastructure cases. Methodologies used. Discuss the basics.

Specific objectives:
Understand the effect of infrastructures on the economy of a territory. Know the instruments used to quantify the impact. Discuss methodologies for assessing impacts Discuss a real case and assess it.

Full-or-part-time: 14h 23m
Theory classes: 3h
Practical classes: 3h
Self study : 8h 23m

Assessment of environmental impacts

Description:
Public goods, private goods, common resources. Define the concept of externalities and monetary valuation techniques. Introduce the environmental elements in the economic analysis
Based on real cases, analyze the criteria for assessing the environmental elements and their consequences. Assess the environmental impact of infrastructure.

Specific objectives:
Understand the relationship between economics and the environment Understand the techniques for assessing environmental functions
Understand the value of the environmental impact of infrastructures. That students learn to use environmental assessment techniques

Full-or-part-time: 14h 23m
Theory classes: 2h
Practical classes: 4h
Self study : 8h 23m

Elements of legislation in the field of Civil Engineering

Description:
Analyze the characteristics of a real concession in the field of infrastructure. Analyze the specifications of an infrastructure.

Specific objectives:
Understand that it is a concession. Familiarize yourself with the process of awarding a public work
Discuss real cases of concessions and awards

Full-or-part-time: 14h 23m
Theory classes: 2h
Practical classes: 4h
Self study : 8h 23m
Practical case seminar

Description:
Present a group work on a topic of the subject

Specific objectives:
Encourage collaborative work Reflect on specific cases and their application

Full-or-part-time: 4h 48m
Practical classes: 2h
Self study : 2h 48m

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.

EXAMINATION RULES.

If any of the continuous assessment activities are not carried out in the scheduled period, it will be considered as a zero score.

BIBLIOGRAPHY

Basic: