

## Course guide

# 250715 - 250715 - Economical and Financial Aspects of Construction

Last modified: 28/03/2024

**Unit in charge:** Barcelona School of Civil Engineering  
**Teaching unit:** 758 - EPC - Department of Project and Construction Engineering.  
**Degree:** MASTER'S DEGREE IN STRUCTURAL AND CONSTRUCTION ENGINEERING (Syllabus 2015). (Optional subject).  
**Academic year:** 2023    **ECTS Credits:** 5.0    **Languages:** Spanish

### LECTURER

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**Coordinating lecturer:** XAVIER ROCA RAMON  
**Others:** XAVIER FERRÉ TAFALLA, PEDRO JUDEZ MUÑOZ, XAVIER ROCA RAMON

### TEACHING METHODOLOGY

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The course consists of 3 hours per week of classroom activity, mixing theoretical lectures and solving practical problems with greater interaction with the students.

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.

Although most of the sessions will be given in the language indicated, sessions supported by other occasional guest experts may be held in other languages.

### LEARNING OBJECTIVES OF THE SUBJECT

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Subject to provide the skills needed to develop cost management and financial analysis of a construction project

- Capability to develop cost management and financial analysis of a construction project, including all stages, from conception to execution. - Capability to consider economic aspects as a criterion for decision making, both in the design phase and in the work construction. - Knowledge of different types of costs on a construction project, the need for economic planning and cost control during its evolution.

The costs of execution of the work construction. Estimated construction costs. Indirect costs. Costs associated with construction waste. Costs associated with site logistics. Time schedule and Economical planning of the construction: management of work teams, control of the economic development of the project, cash-flow analysis of the construction project. Economic Survey of alternative constructive solutions. Cost allocation for workplaces. Decision making in the project stage. Decision making in the execution phase of the work. Sensitivity analysis in construction management. Financial analysis of the project and construction. Determination of the necessary funding. Financial models. Funding sources. Economic viability of the construction project. Methods of economic evaluation of a construction project .



## STUDY LOAD

Type	Hours	Percentage
Hours medium group	9,8	7.83
Self study	80,0	63.95
Hours large group	25,5	20.38
Hours small group	9,8	7.83

Total learning time: 125.1 h

## CONTENTS

### Introduction + Design Phase

**Description:**

Introduction + Design Phase

**Full-or-part-time:** 9h 36m

Theory classes: 4h

Self study : 5h 36m

### Budgets

**Description:**

Budgets

**Full-or-part-time:** 9h 36m

Theory classes: 4h

Self study : 5h 36m

### Viabilidad + Licitación

**Description:**

Viability

**Full-or-part-time:** 9h 36m

Theory classes: 4h

Self study : 5h 36m

### Estimated economic

**Description:**

Economical Estimation

**Full-or-part-time:** 12h

Laboratory classes: 5h

Self study : 7h



### Cost centers

**Description:**

Cost Centres

**Full-or-part-time:** 12h

Laboratory classes: 5h

Self study : 7h

### Economics and Management

**Description:**

Economics and Management

**Full-or-part-time:** 9h 36m

Theory classes: 4h

Self study : 5h 36m

### Control works

**Description:**

Control works

**Full-or-part-time:** 12h

Practical classes: 5h

Self study : 7h

### Financing Systems

**Description:**

Financing Systems

**Full-or-part-time:** 7h 11m

Theory classes: 3h

Self study : 4h 11m

### Evaluation

**Full-or-part-time:** 12h

Laboratory classes: 5h

Self study : 7h

## GRADING SYSTEM

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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.

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Failure to perform a laboratory or continuous assessment activity in the scheduled period will result in a mark of zero in that activity.

## BIBLIOGRAPHY

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### Basic:

- Roca, Xavier. Apuntes propis de la assignatura [on line]. [Consultation: 18/05/2020]. Available on: <https://atenea.upc.edu/login/index.php>.