

Economical and Financial Aspects of Construction (250715)

General information

School:	ETSECCPB
Departments:	751 - Departament d'Enginyeria Civil i Ambiental, 758 - Departament d'Enginyeria de Projectes i de la Construcció
Credits:	5.0 ECTS
Programs:	1140 - MÀSTER UNIVERSITARI EN ENGINYERIA ESTRUCTURAL I DE LA CONSTRUCCIÓ (pla 2015)
Course:	2015/2016
Course language:	Castellano

Faculty

Responsible faculty: Xavier Roca Ramon

Teacher: Xavier Roca Ramon

Generic objectives

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 .

Skills

Specific skills

To apply innovative and sustainable technological aspects in the management and implementation of projects and works.

To analyze the multiple technical and legal conditions arising in the construction of public works, and use proven methods and proven technologies with the aim of achieving greater efficiency in construction while respecting the environment and protecting the safety and health of workers and users of public works.

Generic skills of subject

To conceive, design, analyze and manage structures or structural elements of civil engineering or building, encouraging innovation and the advance of knowledge.

To develop, improve and use conventional materials and new construction techniques to ensure the safety requirements, functionality, durability and sustainability.

To define construction processes and methods of organization and management of projects and works.

To design plans for safety, quality and environmental and socioeconomic impacts related to the construction process.

ECTS credits: total hours of student work

		Dedication	
		Hours	Percent
Supervised Learning	Theory	25.00	55.6%
	Assignments	15.00	33.3%
	Laboratory	5.00	11.1%
	Supervised activities	0.00	0.0%
Self-Learning		105.00	

Contents

Introduction + Design Phase

Dedication

5.0h. Theory

Description

Introduction + Design Phase

Budgets

Dedication

5.0h. Theory

Description

Budgets

Viabilidad + Licitación

Dedication

5.0h. Theory

Description

Viability

Estimated economic

Dedication

5.0h. Assignments

Description

Economical Estimation

Cost centers

Dedication

5.0h. Assignments

Description

Cost Centres

Economics and Management

Dedication

5.0h. Theory

Description

Economics and Management

Control works

Dedication

5.0h. Assignments

Description

Control works

Financing Systems

Dedication

5.0h. Theory

Description

Financing Systems

Evaluation

Dedication

5.0h. Laboratory

Activities

Grading rules (*)

(*) The evaluation calendar and grading rules will be approved before the start of the course.

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.

Test rules

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

Teaching methodology

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.

Office hours

Contact xavier.roca@upc.edu

Basic bibliography

- Xavier Roca. **Apuntes propios de la asignatura.**