

Construction Management (250701)

General Information

School	ETSECCPB
Departments	Departament d'Enginyeria Civil i Ambiental (DECA)
Credits	5.0 ECTS
Programs	MÀSTER UNIVERSITARI EN ENGINYERIA ESTRUCTURAL I DE LA CONSTRUCCIÓ (pla 2015)
Course	2019/20

Main teaching language at each group

- Group 10Q1 language pending definition (Q1)
- Group ENGQ1 English (Q1)

Faculty

Responsible Faculty: Jose Turmo Coderque

Faculty: Javier Pablo Ainchil Lavin, Albert Mas Soler, Gonzalo Ramos Schneider, Jose Turmo Coderque

Objectives of Education

Subject to introduce the students to the knowledge of the market of public works focusing on the characteristics of the Spanish sector .

- Knowledge of the characteristics of the construction sector , their interrelationships and their complexity. - Getting to the terminology used in the project and construction work with the agents involved in construction and their interrelations. - Knowledge of the unique aspects of construction

Cycle of Project and Work Construction. Tendering of Public Works. Tendering of Private Works. Tendering and contracting mechanisms. Analysis of concessions. Execution of works constructions: Structures

Competencies

Especific

Designing and building using traditional materials (reinforced concrete, prestressed concrete, structural steel, masonry, wood) and new materials (composites, stainless steel, aluminum, shape memory alloys?). 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

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.

Total hours of student work

		Hours	Percentage
Supervised Learning	Large group	19.5 h	43.33 %
	Medium group	9.75 h	21.67 %
	Laboratory classes	9.75 h	21.67 %
	Guided Activities	6.0 h	13.33 %
Self Study		80.0 h	

Contents

Unit 1

Analysis of project and construction agents
Practical work

Specific Objectives

Identify the main parts of the project and building agents and their functions
Developing a practical work that is the technical and economic of planning a real work

Unit 2

Bidding. Technical and economic planning

Specific Objectives

Knowing the different bidding strategies and to prepare an offer and a work plan.

Unit 3

Occupational risk prevention

Specific Objectives

Learn to manage health and safety in construction work.

Unit 4

Quality and Environmental Management

Specific Objectives

Learn to prepare a quality plan and work instructions and learn the basics of environmental management work

Unit 5

Management during execution

Specific Objectives

Learn the main tools available to the project manager for adequate technical and financial management of the work

Unit 7

Construction Methods

Specific Objectives

Learn the types of reconstruction methods for structures and geotechnical works

Activities

Visits to work site or construction company

Try make at least one visit to a work related project study.

Dedication

6h

Teaching Methodology

The course consists of 2,3 hours per week of classroom activity (large size group) and 0,3 hours weekly with half the students (medium size group).

The 2,3 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 0,3 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.

The rest of weekly hours devoted to laboratory practice.

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.

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.

Office Hours

Appointments will be done with the teachers of the subject

Bibliography

Basic

- Peurifoy, Robert L. Construction planning, equipment, and methods. Ninth edition. New York, NY: McGraw-Hill Education, [2018]. ISBN 9781260108804.
- Rayner, Paul; Reiss, Geoff; MacNicol, Donnie. [Portfolio and programme management demystified : managing multiple projects successfully](#). Second edition. London ; New York: Routledge. Taylor & Francis Group, [2013]. ISBN 9780415558341.
- Institution of Civil Engineers (Gran Bretanya). CESMM4 : civil engineering standard method of measurement. Fourth edition. Westminster: ICE Publishing, [2012]. ISBN 9780727757517.
- Institution of Civil Engineers (Gran Bretanya). CESMM4 : civil engineering standard method of measurement : examples. Westminster: ICE Publishing, [2015]. ISBN 9780727757593.
- Broome, Jon. NEC3 : a user's guide. Westminster: ICE Publishing, [2012]. ISBN 9780727741097.
- NEC4 / NEC Contracts. London: neccontract.com, [juni 2017]. ISBN 9780727763211.
- Sørensen, Jakob B. FIDIC red book : a companion to the 2017 construction contract. London: ICE Publishing, [2019]. ISBN 9780727764348.
- Sørensen, Jakob B. FIDIC silver book : a companion to the 2017 EPC/Turnkey contract. London: ICE Publishing, [2019]. ISBN 9780727764362.
- EquipmentWatch. Rental Rate Blue Book / Cost Recovery.

Complementary

- Harris, Frank. [Modern construction and ground engineering equipment and methods](#). 2nd ed. Essex: Longman Scientific & Technical, 1994. ISBN 0582236576.