

Course guide

250731 - 250731 - Construction Methods and Project Management

Last modified: 14/06/2024

Unit in charge: Barcelona School of Civil Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.
Degree: MASTER'S DEGREE IN STRUCTURAL AND CONSTRUCTION ENGINEERING (Syllabus 2015). (Compulsory subject).
Academic year: 2024 **ECTS Credits:** 5.0 **Languages:** Spanish, English

LECTURER

Coordinating lecturer: JOSE TURMO CODERQUE
Others: JAVIER PABLO AINCHIL LAVIN, EVA CASACUBERTA ESPLUGAS, GONZALO RAMOS SCHNEIDER, JOSE TURMO CODERQUE

TEACHING METHODOLOGY

There are two groups, one in Spanish and the other in English. The Spanish group is named like this because the teachers' communication will be mostly in Spanish. The communication of the teachers of the English group will be fundamentally in English. The subject consists of 3 hours a week of face-to-face classes in a classroom. The last hour, in general, both groups will merge to allow the development of the practical part and the joint work of both groups. The realization of several practical works is proposed. It is intended that the student develop their ability to work in multidisciplinary, multicultural and international environments. Student queries may be answered in Spanish, Catalan or English. The practical work and the exams can be answered in Spanish, Catalan or English. Support material is used through the virtual campus: content, statement of work and bibliography. The material can be in Spanish, Catalan and English.

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

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

STUDY LOAD

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



Type	Hours	Percentage
Hours small group	9,8	7.83

Total learning time: 125.1 h

CONTENTS

Unit 1

Description:

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

Full-or-part-time: 51h 36m

Theory classes: 2h
Practical classes: 9h 45m
Laboratory classes: 9h 45m
Self study : 30h 06m

Unit 2

Description:

Bidding. Technical and economic planning

Specific objectives:

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

Full-or-part-time: 4h 48m

Theory classes: 2h
Self study : 2h 48m

Unit 3

Description:

Occupational risk prevention

Specific objectives:

Learn to manage health and safety in construction work.

Full-or-part-time: 4h 48m

Theory classes: 2h
Self study : 2h 48m

Unit 4

Description:

Quality and Environmental Management

Specific objectives:

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

Full-or-part-time: 4h 48m

Theory classes: 2h

Self study : 2h 48m

Unit 5

Description:

Management during execution

Specific objectives:

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

Full-or-part-time: 4h 48m

Theory classes: 2h

Self study : 2h 48m

Unit 7

Description:

Construction Methods

Specific objectives:

Learn the types of reconstruction methods for structures and geotechnical works

Full-or-part-time: 37h 12m

Theory classes: 15h 30m

Self study : 21h 42m

GRADING SYSTEM

The grade for the subject is obtained from the continuous assessment grades. Continuous assessment consists of doing different activities, both individual and group, of an additive and formative nature, carried out during the course (inside the classroom and outside of it). The evaluation tests consist of carrying out some practical work, in groups, which have a value of 50% of the final grade and an individual exam that has a value of 50%. The realization and delivery in time and form of the practical works is an essential condition to pass the subject.

EXAMINATION RULES.

Failure to perform a continuous assessment activity (assignment) in the scheduled period will result in a mark of zero in that activity.

BIBLIOGRAPHY

Basic:

- Peurifoy, R.L ... [et al.]. Construction planning, equipment, and methods [on line]. 10th ed. McGraw-Hill Education, 2024 [Consultation: 25/03/2025]. Available on: <https://www-accessengineeringlibrary-com.recursos.biblioteca.upc.edu/content/book/9781264278725?implicit-login=true>. 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, [juny 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.