Course guides
250731 - 250731 - Construction Methods and Management

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: 2020  ECTS Credits: 5.0  Languages: Spanish, English

LECTURER
Coordinating lecturer: JOSE TURMO CODERQUE
Others: JAVIER PABLO AINCHIL LAVIN, ALBERT MAS SOLER, GONZALO RAMOS SCHNEIDER, JOSE TURMO CODERQUE

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
13365. Designing and building using traditional materials (reinforced concrete, prestressed concrete, structural steel, masonry, wood) and new materials (composites, stainless steel, aluminum, shape memory alloys?).
13367. To apply innovative and sustainable technological aspects in the management and implementation of projects and works.
13370. 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.

Generical:
13360. To conceive, design, analyze and manage structures or structural elements of civil engineering or building, encouraging innovation and the advance of knowledge.
13361. To develop, improve and use conventional materials and new construction techniques to ensure the safety requirements, functionality, durability and sustainability.
13362. To define construction processes and methods of organization and management of projects and works.
13363. To design plans for safety, quality and environmental and socioeconomic impacts related to the construction process.

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.
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


STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>19,5</td>
<td>15.59</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>9,8</td>
<td>7.83</td>
</tr>
<tr>
<td>Hours small group</td>
<td>9,8</td>
<td>7.83</td>
</tr>
<tr>
<td>Guided activities</td>
<td>6,0</td>
<td>4.80</td>
</tr>
<tr>
<td>Self study</td>
<td>80,0</td>
<td>63.95</td>
</tr>
</tbody>
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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 construction methods for structures and geotechnical works

**Full-or-part-time:** 22h 48m  
Theory classes: 9h 30m  
Self study: 13h 18m
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.

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

BIBLIOGRAPHY

**Basic:**
- EquipmentWatch. Rental Rate Blue Book / Cost Recovery.

**Complementary:**