250266 - GESTPROOBR - Construction Management

**Coordinating unit:** 250 - ETSECPB - Barcelona School of Civil Engineering  
**Teaching unit:** 751 - DECA - Department of Civil and Environmental Engineering  
**Academic year:** 2017  
**Degree:** BACHELOR’S DEGREE IN PUBLIC WORKS ENGINEERING (Syllabus 2010). (Teaching unit Optional)  
**ECTS credits:** 4,5  
**Teaching languages:** Spanish

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**Teaching staff**

**Coordinator:** JOSE TURMO CODERQUE  
**Others:** MARIA ELENA FILLOLA CARABALLO, GONZALO RAMOS SCHNEIDER, JOSE TURMO CODERQUE

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**Opening hours**

**Timetable:** For each teacher it shall be fixed at the beginning of the course

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**Degree competences to which the subject contributes**

**Specific:**

- 3070. Knowledge of construction procedures, construction machinery and the techniques for organising, measuring and valuing works.
- 3078. Ability to analyse health and safety issues in construction works
- 3084. Ability to use the appropriate construction procedures, construction machinery and planning techniques in carrying out works

**Transversal:**

- 578. ENTREPRENEURSHIP AND INNOVATION: Knowing about and understanding how businesses are run and the sciences that govern their activity. Having the ability to understand labor laws and how planning, industrial and marketing strategies, quality and profits relate to each other.
- 581. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.
- 583. SELF-DIRECTED LEARNING. Detecting gaps in one's knowledge and overcoming them through critical self-appraisal. Choosing the best path for broadening one's knowledge.
- 584. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

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**Teaching methodology**

The course consists of 3 hours per week, which is mainly engaged in practical assignments. Students, in small groups, should study a civil project and develop a work plan, technical and economic, and publicly defend it.

Support material is located at virtual campus ATHENA: content, programming and evaluation activities directed learning and literature.

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**Learning objectives of the subject**

Knowledge of construction methods, equipment and planning for managing and takeoff. Ability to analyze health and safety issues in construction works. Ability to use the appropriate construction methods, construction equipment and planning on site.
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Ability to manage public works

Historical development of civil engineering and construction techniques applied in public works; Constituent elements of public works; Analysis and assessment criteria; Estimation of public works projects; Organisation and planning of construction projects, including prevention, safety and health, and construction quality systems; Basics of public works; Project documents and references to the budget; Contractor classification; Price adjustment; Estimation of construction projects; Bottom line; Price justification; Lump-sum items; Budget structure; Computer tools for budget planning; Working with price databases; Budget structure: chapters and subchapters; Measurement: earthworks, drainage networks, roads and surfacing, structures; Foundations, reinforced and prestressed concrete, detailing, structural steel; Urban elements and finishes; Urban railway projects and tunnels; General aspects of construction project planning; Computer tool for creating a construction plan.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 112h 30m</th>
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<tbody>
<tr>
<td>Hours large group:</td>
<td>19h</td>
</tr>
<tr>
<td>Hours medium group:</td>
<td>4h</td>
</tr>
<tr>
<td>Hours small group:</td>
<td>22h</td>
</tr>
<tr>
<td>Guided activities:</td>
<td>4h 30m</td>
</tr>
<tr>
<td>Self study:</td>
<td>63h</td>
</tr>
</tbody>
</table>
## Content

<table>
<thead>
<tr>
<th>Project and Construction Management</th>
<th>Learning time: 108h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 19h</td>
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<tr>
<td></td>
<td>Practical classes: 4h</td>
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<tr>
<td></td>
<td>Laboratory classes: 22h</td>
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<tr>
<td></td>
<td>Self study: 63h</td>
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</tbody>
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### Description:
- Development of a practical assignment of a technical and economic planning of a real civil site job.
- Analysis of the design project and construction agents
- Tender. Technical and economic planning
- Prevention of occupational hazards
- Quality and environmental management
- Management during implementation
- Insurable risks during construction. Complaints
- Reception. Warranty.
- Building Information Modelling

### Specific objectives:
- Apply the knowledge acquired.
- Identify the main parts of the design project and construction agents and their functions
- Know the different types of tendering and bidding strategies and to prepare a work plan.
- Learning to manage safety and health on a construction site.
- Learn to develop a quality plan and work instructions and learn the basics of environmental management
- Learn the main tools available to the Site Manager for adequate technical and financial management of the construction works
- Learn what insurance is, the various roles and the main types of insurance in construction. Learn to manage claims.
- Learn the reception types for a given construction type and scope of the guarantees by type of construction.
- Learn how to use a BIM software
Qualification system

The course grade is obtained from continuous assessment scores (practical assignment TD and oral defense of the contents of the subject EO).

The final grade for the course is obtained with the following formula:

\[ NF = (0.6 \times TD + 0.4 \times EO) \]

Criteria for re-evaluation qualification and eligibility: Students that failed the ordinary evaluation and have regularly attended all evaluation tests will have the opportunity of carrying out a re-evaluation test during the period specified in the academic calendar. Students who have already passed the test or were qualified as non-attending will not be admitted to the re-evaluation test. The maximum mark for the re-evaluation exam will be five over ten (5.0). The non-attendance of a student to the re-evaluation test, in the date specified will not grant access to further re-evaluation tests. Students unable to attend any of the continuous assessment tests due to certifiable force majeure will be ensured extraordinary evaluation periods.

These tests must be authorized by the corresponding Head of Studies, at the request of the professor responsible for the course, and will be carried out within the corresponding academic period.

The requisite to make the re-evaluation will be to submit the practical assignment. However, the mark of the re-evaluation will be obtained exclusively from re-evaluation exam.

Regulations for carrying out activities

Delivery of the practical assignment is mandatory to pass the subject.

Bibliography

Basic:


Complementary:
