

29738 - Construction Technology

Syllabus Information

Academic year: 2023/24

Subject: 29738 - Construction Technology

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 434 - Bachelor's Degree in Mechanical Engineering

ECTS: 6.0

Year: 4

Semester: Second semester

Subject type: Optional

Module:

1. General information

The objective of the subject is to learn general aspects related to the construction of buildings, both in terms of the technology of its material, typological and constructive execution, as well as the safety and risk prevention derived from its construction. The student will be aware of the constructive implications of their own designs in terms of safety, responsibility and efficiency, as well as the civil and criminal regulations and responsibilities involved in the professional practice in the construction field.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030: Goal 9 (9.2 and 9.4).

2. Learning results

Knowledge of the principles of construction technology and the regulations governing it.

Ability to identify the materials used in construction, their properties and applications.

Knowledge and understanding of the operation of different types of machinery used in construction processes

Knowledge and understanding of the foundation systems, their constructive logic and their choice based on the requirements of the structure and the characteristics of the soil on which it rests

Knowledge and understanding of both vertical and horizontal structural systems. Knowledge of the systems of enclosure and finishing of a building.

Expression through drawings and sketches of construction details and basic construction processes in construction with precision and clarity

Knowledge and understanding of safety and risk prevention requirements in construction, and the implementation of these plans and projects

Knowledge and ability to design the construction of industrial buildings.

3. Syllabus

1. Introduction to construction technology.
2. Study and description of the machinery involved in construction.
3. Description of the work prior to the start of the work. Land conditioning and drainage. Foundation and soil containment systems.
4. Both vertical and horizontal load-bearing systems.
5. Exterior enclosure systems and their selection criteria.
6. Description of the distribution and finishing systems.
7. Study of safety and risk prevention in construction.
8. Civil and criminal liability. The Building Management Law and professional competences.

4. Academic activities

- Acquisition of theoretical knowledge through lectures, preparing cases that will anticipate the contents to develop.
- Practical sessions to enhance hands-on learning. After each session, the student will be asked to develop independently a work that will make up the portfolio prepared by the student.
- Tutorials to review the acquisition of knowledge and the development of the work.
- Visits to buildings and civil works under construction and/or completed.

Attendance at all activities is essential to acquire the competencies. The student will have at his disposal the teaching material elaborated by the teaching staff of the subject.

5. Assessment system

The student will be evaluated through a **continuous evaluation** procedure consisting of:

- The realization and oral presentation of a work with the description of the way in which a building or civil work has been constructed, with special incidence in its constructive details, as well as in the techniques used in its construction. The scope of the explanation will cover the complete construction, from the foundation to the roof, including the constructive resolution of the structure and the thermal envelope of the building. 60% of the grade.
- Critical and active participation in the development of the class. 20% of the grade Missing more than 8 hours of class will result in the impossibility of continuous evaluation in the subject.
- The collection of notes and follow-up notes on the development of the theoretical and practical classes of the subject. 20% of the grade.

No cell phones or laptops may be used during classes and they may not be recorded

Global assessment.

Students may be evaluated by means of a global test, consisting of a theoretical-practical exam to be taken on the dates indicated by the academic calendar of the School of Engineering and Architecture.