

## 28723 - Construction Works

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 28723 - Construction Works

**Faculty / School:** 175 -

**Degree:** 423 - Bachelor's Degree in Civil Engineering

**ECTS:** 6.0

**Year:** 3

**Semester:** First semester

**Subject Type:** Compulsory

**Module:** ---

## 1.General information

### 1.1.Aims of the course

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The course and its expected results respond to the following approaches and objectives:

In the first place, enabling students to learn about the world in which they are going to carry out their professions and the regulations that affect them.

Secondly, students must acquire the necessary skills that will allow them to know, understand, design and implement systems and construction processes related to the building work, that is, foundations, containments, structures, claddings, covers, coatings and pavements.

### 1.2.Context and importance of this course in the degree

The course of Building Works is the first contact that students of Civil Engineering have with building itself. From here, they begin to become aware of how the construction process develops in the building world.

It is part of a group of specific compulsory training subjects, belonging to the "Building and Prefabrication" area of Civil Constructions. These courses will provide graduates with further professional skills.

### 1.3.Recommendations to take this course

The course on Building Works does not require other prerequisites than those established for the access to the degree. However, for the progress of the course, knowledge and strategies from the courses of Technical Drawing, for the representation of constructive details, and of Physics and Mechanics for the understanding of concepts related to structure systems will be an asset.

## 2.Learning goals

### 2.1.Competences

### 2.2.Learning goals

### 2.3.Importance of learning goals

## 3.Assessment (1st and 2nd call)

### 3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

## 4. Methodology, learning tasks, syllabus and resources

### 4.1. Methodological overview

The learning process designed for this subject is based on the following:

Strong interaction between the teacher/student. This interaction is brought into being through a division of work and responsibilities between the students and the teacher. Nevertheless, it must be taken into account that, to a certain degree, students can set their learning pace based on their own needs and availability, following the guidelines set by the teacher.

The current subject is conceived as a stand-alone combination of contents, yet organized into three fundamental and complementary forms, which are: the theoretical concepts of each teaching unit, the solving of problems or resolution of questions and laboratory work, at the same time supported by other activities

The organization of teaching will be carried out using the following steps:

? **Theory Classes:** Theoretical activities carried out mainly through exposition by the teacher, where the theoretical supports of the subject are displayed, highlighting the fundamental, structuring them in topics and or sections, interrelating them.

? **Practical Classes:** The teacher resolves practical problems or cases for demonstrative purposes. This type of teaching complements the theory shown in the lectures with practical aspects.

? **Laboratory Workshop:** The lecture group is divided up into various groups, according to the number of registered students, but never with more than 20 students, in order to make up smaller sized groups.

? **Individual Tutorials:** Those carried out giving individual, personalized attention with a teacher from the department. Said tutorials may be in person or online.

### 4.2. Learning tasks

The programme offered to the student to help them achieve their target results is made up of the following activities...

Involves the active participation of the student, in a way that the results achieved in the learning process are developed, not taking away from those already set out, the activities are the following:

? **Face-to-face generic activities:**

? **Theory Classes:** The theoretical concepts of the subject are explained and illustrative examples are developed as support to the theory when necessary.

? **Practical Classes:** Problems and practical cases are carried out, complementary to the theoretical concepts studied.

? **Laboratory Workshop:** This work is tutored by a teacher, in groups of no more than 20 students.

? **Generic non-class activities:**

? Study and understanding of the theory taught in the lectures.

? Understanding and assimilation of the problems and practical cases solved in the practical classes.

? Preparation of seminars, solutions to proposed problems, etc.

? Preparation of laboratory workshops, preparation of summaries and reports.

? Preparation of the written tests for continuous assessment and final exams.

The subject has 6 ECTS credits, which represents 150 hours of student work in the subject during the trimester, in other words, 10 hours per week for 15 weeks of class.

A summary of a weekly timetable guide can be seen in the following table. These figures are obtained from the subject file in the Accreditation Report of the degree, taking into account the level of experimentation considered for the said subject is moderate

Activity	Weekly school hours
Lectures	3
Laboratory Workshop	1
Other Activities	6

Nevertheless the previous table can be shown into greater detail, taking into account the following overall distribution:

- ? 40 hours of lectures, with 50% theoretical demonstration and 50% solving type problems.
- ? 10 hours of laboratory workshop, in 1 or 2 hour sessions.
- ? 6 hours of written assessment tests, one hour per test.
- ? 4 hours of PPT presentations.
- ? 90 hours of personal study, divided up over the 15 weeks of the 2<sup>nd</sup> semester.

There is a tutorial calendar timetable set by the teacher that can be requested by the students who want a tutorial.

### 4.3.Syllabus

#### Theory

Lesson 1	<b>In Building Construction Process.</b>
Lesson 2	<b>Foundations.</b>
Lesson 3	<b>Deep Foundations.</b>
Lesson 4	<b>Walls.</b>
Lesson 5	<b>Structures and Floor Slab.</b>
Lesson 6	<b>Stairs.</b>
Lesson 7	<b>Metal Structures.</b>
Lesson 8	<b>Wooden Structures.</b>
Lesson 9	<b>Masonry Structures.</b>
Lesson 10	<b>Brick Facades.</b>
Lesson 11	<b>Interior Partitions</b>
Lesson 12	<b>Roofs I</b>
Lesson 13	<b>Roofs II</b>
Lesson 14	<b>Claddings</b>
Lesson 15	<b>Pavements</b>

#### Practice

Practice 1	<b>Design of shallow foundations.</b>
Practice 2	<b>Estructure plan view desing. Decision of slab load state.</b>
Practice 3	<b>Calculation and design of stairs..</b>
Practice 4	<b>Brick Wall design.</b>
Practice 5	<b>Sloping roof and rooftop design.</b>

### 4.4.Course planning and calendar

The dates of the final exams will be those that are officially published at <http://www.eupla.unizar.es/asuntos-academicos/examenes>

The planning orientation shown below

- Week 1: Lesson 1.
- Week 2: Lesson 2
- Week 3: Lesson 3
- Week 4: Lesson 4
- Week 5: Lesson 5
- Week 6: Lesson 6
- Week 7: Lesson 7
- Week 8: Lesson 8
- Week 9: Lesson 9
- Week 10: Lesson 10
- Week 11: Lesson 11
- Week 12: Lesson 12
- Week 13: Lesson 13
- Week 14: Lesson 14
- Week 15: Lesson 15

#### **4.5. Bibliography and recommended resources**

[http://biblos.unizar.es/br/br\\_citas.php?codigo=28723&year=2019](http://biblos.unizar.es/br/br_citas.php?codigo=28723&year=2019)