

## 28725 - Foundation Structures

### Información del Plan Docente

<b>Academic Year</b>	2016/17
<b>Academic center</b>	175 - Escuela Universitaria Politécnica de La Almunia
<b>Degree</b>	423 - Bachelor's Degree in Civil Engineering
<b>ECTS</b>	6.0
<b>Course</b>	
<b>Period</b>	Second semester
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

### **1.Basic info**

#### **1.1.Recommendations to take this course**

#### **1.2.Activities and key dates for the course**

### **2.Initiation**

#### **2.1.Learning outcomes that define the subject**

#### **2.2.Introduction**

### **3.Context and competences**

#### **3.1.Goals**

#### **3.2.Context and meaning of the subject in the degree**

#### **3.3.Competences**

#### **3.4.Importance of learning outcomes**

### **4.Evaluation**

### **5.Activities and resources**

#### **5.1.General methodological presentation**

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.

## 28725 - Foundation Structures

The current subject Estructuras de Cimentación, 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

### 5.2.Learning 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.

## 28725 - Foundation Structures

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

### 5.3.Program

Topic 1	GEOTECHNICAL STUDY
Topic 2	RECOGNITION OF THE AREA
Topic 3	PROPERTIES OF THE SOILS
Topic 4	TENSIONS AND CAPACITY
Topic 5	WALLS OF CONTAINMENT
Topic 6	WALLS OF BASEMENT AND SCREENS
Topic 7	SUPERFICIAL FOUNDATIONS
Topic 8	SLABS OF FOUNDATION
Topic 9	PILES
Topic 10	PATHOLOGY OF THE FOUNDATIONS

Practical

There were realized practical exercises of every topic.

### 5.4.Planning and scheduling

Calendar of meetings attend them and presentation of works

## 28725 - Foundation Structures

Every semester has 15 weeks that adjust to the agenda.

The continuous assessment takes a calendar of activities that debers to respect.

The activities of continuous assessment were realized after finishing the agendas of class of every paragraph.

Calendar of evaluation.

Nombre	Inicio	Entrega	Solución	Calificación
Practice 1	3 week	4 week	4 week	5 week
Practice 2	7 week	8 week	8 week	9 week
Practice 3	12 week	13 week	13 week	14 week
(1ªConv)				
(2ªConv)				

The dates of final examinations, they are capable of changes. They will prevail the official dates published in <http://www.eupla.es>

### 1. Recursos

#### Materials

The whole material of class was joining in the platform Moodle

### 5.5. Bibliography and recommended resources

- Ingeniería geológica / Luis I. González de Vallejo...[et al.] Madrid [etc.] : Prentice Hall, 2006
- Geotécnia y cimientos. V. 1, Propiedades de los suelos y de las rocas / J.A. Jiménez Salas, J.L. de Justo Alpañes . - 2a. ed. Madrid : Rueda, D.L. 1975
- Geotecnia y cimientos. V. 2, Mecánica del suelo y de las rocas / J.A. Jiménez Salas, J.L. de Justo Alpañes, Alcibíades A. Serrano González . - [1a. ed.] Madrid : Rueda, D.L. 1976
- Geotécnia y cimientos. V. 3, Cimentaciones, excavaciones y aplicaciones de la geotecnia / coordinador y director edición, José Antonio Jiménez Salas ; Luis del Cañizo Perate...[et al.] Madrid : Rueda, D.L. 1980
- Peck, Ralph B.. Ingeniería de cimentaciones / Ralph B. Peck, Walter E. Hanson, Thomas H. Thornburn. - 2a ed México : Limusa, 1982

## 28725 - Foundation Structures

- Muzás Labad, Fernando. Mecánica del suelo y cimentaciones / Fernando Muzás Labad. - 1ª edición Madrid : Fundación Escuela de la Edificación, 2007
- Bowles, Joseph E.. Foundation analysis and design / Joseph E. Bowles. - 4th ed New York [etc.] : McGraw-Hill, cop. 1988
- Poulos, H. G.. Pile foundation analysis and design / H. G. Poulos, E. H. Davis.. - 1ª edic New York : Wiley, c1980.
- Canadian Geotechnical Society. Canadian Foundation Engineering Manual/ Canadian Geotechnical Society. - 4th edition Canada:Bitech publisher ltd,2006.
- Cedex. Curso sobre proyecto y construcción de cimentaciones profundas /CEDEX, Centro de Estudios y Experimentación de Obras Públicas, Ministerio de Obras Públicas, Gabinete de Formación y Documentación. - 1ª edición Madrid, 1989
- Tomlinson, M. J. (Michael John). Pile design and construction practice / M.J. Tomlinson. - 4th ed London ; New York : E & FN Spon, 1994
- Sanz, LJ; Salesa, A.. Problemas resueltos de tecnologías de estructuras/LJ. Sanz ; A. Salesa. - 1ª edición Zaragoza:Copycenter,2011