

## 30155 - Structures Calculus

### Información del Plan Docente

<b>Academic Year</b>	2016/17
<b>Academic center</b>	179 - Centro Universitario de la Defensa - Zaragoza
<b>Degree</b>	563 - Bachelor's Degree in Industrial Organisational Engineering 457 - Bachelor's Degree in Industrial Organisational Engineering
<b>ECTS</b>	6.0
<b>Course</b>	4
<b>Period</b>	First semester
<b>Subject Type</b>	Optional
<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 that is designed for this subject is based on the following:

The course is planned to facilitate continuous and active student learning. Learning resources to be used to achieve it are:

-Theoretical Classes given by the teacher to whole group. In these, theoretical concepts of the subject will be illustrated with examples to help understand and in which students are challenged to participate, reasoning about theoretical concepts exposed.

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- classes Problems. In these classes the contents of the theory classes are strengthened by performing carefully selected problems to cover all relevant aspects. Practical sessions organized so that students become familiar with spreadsheet programs. Individual realization of problems, jobs and public exhibitions independently.
- Tutorías In which the student will help resolve the doubts raised during learning.
- Other Learning activities scheduled.

### 5.2.Learning activities

- Theoretical classes.
- Classes about calculation programs.
- Classes about problems of the subject.
- Group work sessions.
- Tutorials.
- Conferences Given by invited staff.
- Visits to a work.

### 5.3.Program

Summary results of *Resistance Materials* subject.

Introduction to the theory of structures. Stability and hyperstaticity.

Basic theorems and applications.

Technical Building Code (CTE), Basic Structural Safety Document (DB-SE).

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Isostatic structures. Articulated structures.

Statically indeterminate structures.

Matrix calculation of bar structures.

### 5.4.Planning and scheduling

It will be announced by the teacher, both in class and through the platform Moodle support.

### 5.5.Bibliography and recommended resources