30041 - Structural Analysis of Industrial Facilities

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	436 - Bachelor's Degree in Industrial Engineering Technology
ECTS	6.0
Course	4
Period	First semester
Subject Type	Optional
Module	---

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

5.2.Learning activities

5.3.Program

Part I: Three dimensional surface structures

1. Kirchhoff plate theory

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2. Kirchhoff-Love shell theory

3. Liquid storage tanks

4. Grain storage silos

5. Gas storage tanks

Part II: Structural dynamics

1. Structural dynamics fundamentals. Calculation equations and methods

2. Single degree of freedom systems. Free and forced vibrations

3. N degree of freedom systems

4. Calculation of natural frequencies and mode shapes

5. Methods for solving the equations of motion

6. Seismic analysis

Part III: Retaining walls and foundations

1. Classification and characterization of soil behaviour

2. Strains and stresses calculation

3. Retaining walls calculation

4. Foundations calculation

5.4.Planning and scheduling

5.5.Bibliography and recomended resources