

30041 - Structural Analysis of Industrial Facilities

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	436 - Bachelor's Degree in Industrial Engineering Technology
ECTS	6.0
Year	4
Semester	First semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

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

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

5.2.Learning tasks

5.3.Syllabus

Part I: Three dimensional surface structures

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1. Kirchhoff plate theory
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.Course planning and calendar

5.5.Bibliography and recommended resources