

DIM-IND-621 Industrial Constructions

- SEMESTER:** Fall or spring
CREDITS: 6 ECTS (4 hrs. per week)
LANGUAGE: Spanish
DEGREES: MII

Course overview

This course gives an introduction to industrial buildings. Steel and reinforce concrete codes are introduced in order to design basic elements of industrials constructions. Types of foundations and them design are also presented. Finally auxiliary elements as roofs or closures as well as bolted and welded joints are studied. The course include a practical introduction to CYPE and ANSYS computer programs.

Prerequisites

Course on Mechanics of Materials.

Course contents

Theory:

1. Structural typologies. Uses.
2. Materials used in the industrial constructions. Steel and concrete. Special features and requirements.
3. Actions on the building. Standards.
4. Frame structures. Standards and calculation. Program CYPE.
5. Foundations. Types and Standards.
6. Roofs and external wall coverings.
7. Storage silos and tanks. Types. Codes. Program ANSYS

Laboratory:

There will be six 2-hour sessions.

- P1. Program CYPE.
- P2. Program CYPE.
- P3. Program ANSYS. Frames.
- P4. Program ANSYS. Shells.
- P5. Program ANSYS. Modal analysis.

P6. Program ANSYS. Thermo-mechanical analysis.

Textbook

- There is not textbook. All notes will be uploaded in Moodle.

Grading

The following conditions must be accomplished to pass the course:

- A minimum overall grade of at least 5 over 10.

The overall grade is obtained as follows:

- Final exam 30%.
- Work group (70%). To solve a problem proposed, comparing numerical models and theoretical developments