Advanced Concepts of Industrial Constructions

Academic Year: (2024 / 2025) **Review date: 26-04-2024**

Department assigned to the subject: Continuum Mechanics and Structural Analysis Department

Coordinating teacher: GARCIA CASTILLO, SHIRLEY KALAMIS

Type: Electives ECTS Credits : 3.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Elasticity, Strength of materials, and theory of structures.

OBJECTIVES

Skills to be acquired:
- Knowledge about design of industrial structures
- Understanding of failure mechanisms in structures
- Use of commercial codes to design structures, having the ability to develop a critical analysis of the results.

Learning results:
- Understanding of the basics of the design of industrial structures
- Analysis of the behaviour of industrial structures under different loading conditions
- Preliminary design of structural elements
- Design of structures according to European standards requirements
- Use of commercial codes to design structures

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to industrial constructions
2. European standards for constructions
3. Design and analysis of structural elements
4. Design and analysis of foundations
5. Use of commercial codes to design structures
6. Projects of industrial constructions
7. Introduction to Building Information Modeling (BIM).

LEARNING ACTIVITIES AND METHODOLOGY

Learning activities include:
- Theoretical sessions, small group sessions to solve doubts, individual tutorships and student personal work. These activities are oriented to the acquisition of theoretical knowledge.
- Problem sessions, student oral presentations, individual tutorships and student personal work. These activities are oriented to the acquisition of practical skills.

ASSESSMENT SYSTEM

% end-of-term-examination:	0
% of continuous assessment (assigments, laboratory, practicals…):	100

The final grade is based on continuum assessment and a final report.
In order to pass the course, the attendance and performance of the practical work foreseen in the weekly planning are compulsory. The weighting of the practical work mark in the continuous assessment corresponds to what it is established in the course, in accordance with the regulations of the university. In the subject "Advanced Concepts of Industrial Constructions", the weighting of the laboratory practices takes the value of 100% of the continuous assessment grade.

% end-of-term-examination: 0

% of continuous assessment (assigments, laboratory, practicals…): 100

Students who cannot follow the continuous evaluation will have the possibility of making a final evaluation of 100% of the mark.

For the extraordinary call, students will have the possibility of making a final evaluation with 100% of the mark.

BASIC BIBLIOGRAPHY

- ARGÜELLES ÁLVAREZ, R La estructura metálica hoy. Teoría y práctica. , Librería Técnica Bellisco .

- CALAVERA RUIZ, J Cálculo de estructuras de cimentación, Ed. Instituto Técnico de Materiales y Construcciones , 2000

- MONFORT LLEONART Estructuras metálicas para edificación (adaptado al CTE). , Ed. Universidad Politécnica de Valencia.

BASIC ELECTRONIC RESOURCES

- Ministerio de vivienda . Código técnico de edficación: http://www.codigotecnico.org/web/recursos/documentos/