Structural Typology

Academic Year: (2019 / 2020) **Review date: 23-04-2019**

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

Coordinating teacher: SANTIUSTE ROMERO, CARLOS

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Structural mechanics
Elasticity and Strength of Materials

OBJECTIVES

After passing the course the student will be able to:
know the basic types of structures,
know the mechanical behavior of each of the types studied
select the structural adjustment that is the most convenient way to a predefined mechanical functionality

DESCRIPTION OF CONTENTS: PROGRAMME

Part 1
1. INTRODUCTION TO THE STRUCTURES
2. STRUCTURAL ENGINEERING
3. STRUCTURAL MATERIALS
4. ACTIONS ON STRUCTURES
5. BASIC CONCEPTS
6. BEHAVIOR OF STRUCTURES
7. SUPPORTS AND WALLS
8. BEAMS
9. ARCS
10. VAULTS AND DOMES
11. PLATES AND SHELLS
12. LIGHT STRUCTURES
13. METAL STRUCTURES
14. OTHER STRUCTURES
15. SUPPORT STRUCTURES AND FOUNDATIONS

Part 2
16. ANALYSIS TOOLS
17. PROCEDURES ANALYSIS
18. NORMATIVE
19. INTRODUCTION TO DESIGN OF STEEL STRUCTURES
20. iNTRODUCTION TO BUILDING INFORMATION MODELLING (BIM)

LEARNING ACTIVITIES AND METHODOLOGY

Presential classes and personal work, aimed at the acquisition of theoretical knowledge and practical skills related to the program.
Students are delivered the documentation used by the teacher in class (presentations, ...).
Students, in groups of 3-4, will design a simple structure. Throughout the course must bring together advances in their respective projects in classes where the teacher will discuss their proposals in guiding the development of their work.

ASSESSMENT SYSTEM

The evaluation of the student's knowledge will be held from:
a job to develop along the course, consisting on the design of a structure,
an exam consisting on a test of short questions related to the descriptive content of the course.

Both work and the test will be graded out of 10. Minimum values are not set.

% end-of-term-examination:	0
% of continuous assessment (assigments, laboratory, practicals…):	60

BASIC BIBLIOGRAPHY

- GORDON J. E. Estructuras o por qué las cosas no se caen?, Calamar Ediciones, 2010
- TORROJA MIRET, Eduardo Razón y ser de los tipos estructurales, CSIC, 2000