Universidad Zaragoza

Academic Year/course: 2022/23

30733 - Structures 4

Syllabus Information

Academic Year: 2022/23
Subject: 30733 - Structures 4
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 470 - Bachelor's Degree in Architecture Studies
ECTS: 6.0
Year: 4
Semester: Second semester
Subject Type: Compulsory
Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as theory sessions, problem-solving sessions, autonomous work and study, computer sessions, and tutorials.

4.2. Learning tasks

This course is organized as follows:

1. Theory sessions (T1). They represent the educational core. The course contents are developed together with applied examples. Basic concepts of the course are exposed, together with illustrative examples challenging the students to participate in thinking about the applications of theoretical concepts.

2. Proble-solving sessions (T2). They complement theory sessions, allowing the students the application of theoretical concepts for solving practical engineering problems. They can be used too for developing some abilities, such as the usage of standards, manuals, etc. These sessions are given by the professor for the reduced groups. The objective is the strengthening of the theory sessions? contents by means of a selected collection of problems, covering all the relevant aspects.

3. Computer sessions (T3). They are intended for students to learn the usage of basic tools for design and calculation of reinforced concrete structures. The student should be able to interpret the obtained results and to be able to apply the acquired knowledge dor calculating the proposed structure.

4. Autonomous work and study (T6). It is intended for project-based learning, in order to strengthen the theoretical and practical learning acquired in the rest of activities. After the problem sessions, the student should resolve several proposed problems and practical cases, with a degree of difficulty similar to the problems previously solved in class.

5. Course work (T6). It is intended for project based learning, in order to strengthen the rest of activities and to promote the skills for teamwork.

6. Tutorials. They help the student to integrate the different contents and to consolidate the learning.

4.3. Syllabus

This course will address the following topics:

1. Introduction to reinforced concrete
2. Components of concrete
3. Properties of concrete
4. Basis for calculation. Structural safety
5. Detailing of reinforcement
6. Ultimate limit states under axial forces and bending moments
7. Instability due to compression
8. Ultimate limit states under shear forces and torsional moments
9. Serviceability limit states
10. Retaining wall
11. Structural walls

4.4. Course planning and calendar

The individual work should be delivered within the period set by the professor, announced in advance.

The course work should be delivered within the period set by the professor, announced in advance, and always before the official exam established by the School.

Every professor shall announce the tutorial timetable.

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the College of Higher Engineering and Architecture (EINA) website (https://eina.unizar.es/) and Moodle.

4.5. Bibliography and recommended resources

Usually, the bibliography for the academic year is updated at the School Library (biblioteca.unizar.es):

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30733