

28631 - Structures IV: Geotechnics and Foundations

Syllabus Information

Academic year: 2024/25

Subject: 28631 - Structures IV: Geotechnics and Foundations

Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia

Degree: 422 - Bachelor's Degree in Building Engineering

ECTS: 6.0

Year: 4

Semester: First semester

Subject type: Compulsory

Module:

1. General information

No prior knowledge requirements, beyond those established by the Ministry of Education and Science for access to a university degree in Technical Architecture.

The aim of this subject is to provide the student with the knowledge of the design and dimensioning of foundations in the field of building.

A technical architect cannot be understood without structural foundations that allow him to become familiar with his own construction activity, to carry out tests, to understand and assess the results obtained for the correct execution of the project and the work.

It is recommended to have passed Structures I and II.

2. Learning results

The student, in order to pass this subject, must demonstrate capacity for the design and dimensioning of foundations that will allow him/her to design and direct these foundation structures.

3. Syllabus

The following contents are studied:

- THE GEOTECHNICAL STUDY IN THE CONSTRUCTION ACCORDING TO THE TECHNICAL CODE.
- LAND RECONNAISSANCE.
- DESCRIPTION AND CLASSIFICATION OF SOILS: TYPES.
- DESCRIPTION AND CLASSIFICATION OF SOILS: PROPERTIES
- STRESSES AND BEARING CAPACITY OF THE SOIL. Stresses, compressibility.
- STRESSES AND BEARING CAPACITY OF THE SOIL. Consolidation, shear strength.
- EARTHWORKS AND RETAINING WALLS.
- BASEMENT WALLS AND SCREENS.
- SURFACE FOUNDATIONS.
- DEEP FOUNDATIONS: PILES AND MICROPILES.
- DEEP FOUNDATIONS: SCREENS.

PATHOLOGY OF FOUNDATIONS

4. Academic activities

Face-to-face activities:

A) Theoretical classes: Theoretical concepts of the subject will be explained and practical examples will be developed by teacher.

B) Tutorial practices, classes of practical exercises: Students will develop examples and carry out practical problems or cases related to the theoretical concepts studied.

Tutored autonomous activities: These activities will be guided by the subject faculty

They will be focused on the realization of works/projects, either individually or in small groups, as well as on the methodology of study necessary or more convenient for the assimilation of each of the aspects developed in each subject. The student will have the possibility to carry out these activities at the center, under the supervision of a teacher of the branch/department.

Reinforcement activities: Through a virtual teaching portal (Moodle) various activities will be conducted to reinforce the basic contents of the subject. These activities will be customized and controlled through this

5. Assessment system

At the beginning of the subject the student will choose one of the following two assessment methodologies:

Continuous assessment mode: Characterized by the obligation to take and pass the practical tests, midterm exams and academic work proposed in the subject, within the deadlines established for this purpose. In this case, the student does not have to take a final test.

In the continuous assessment model, the teacher will assess the student's participation in the theoretical classes, the demonstration of the acquired knowledge and the ability to solve problems.

Indicated are the indicative weights of the parts cited in the assessment process.

Participation in theory classes, practical classes, assignments, projects 30%

Continuous assessment exams 70%

Non-continuous assessment: Characterized by not taking or not passing the practical tests, partial exams or academic papers proposed in the subject. In this case, the student must take a final test.

The student must opt for this mode when, due to his/her personal situation, he/she cannot adapt to the pace of work required in the continuous assessment mode

Indicated are the indicative weights of the parts cited in the assessment process.

Final Examination 100%

6. Sustainable Development Goals

5 - Gender Equality

9 - Industry, Innovation and Infrastructure