

28704 - Geological engineering

Información del Plan Docente

Academic Year	2018/19
Subject	28704 - Geological engineering
Faculty / School	175 - Escuela Universitaria Politécnica de La Almunia
Degree	423 - Bachelor's Degree in Civil Engineering
ECTS	6.0
Year	1
Semester	First semester
Subject Type	Basic Education

Module

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

In this course the most important geological aspects of application to various fields of civil engineering are presented, from an eminently basic level, so there are no specific recommendations to take this course.

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

Strong interaction between the teacher/student. This interaction is brought into being through a division of work and responsibilities between the students and the teacher. Nevertheless, it must be taken into account that, to a certain degree, students can set their learning pace based on their own needs and availability, following the guidelines set by the teacher.

The current subject (Engineering Geology) is conceived as a stand-alone combination of contents, yet organized into two

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fundamental and complementary forms, which are: the theoretical concepts of each teaching unit, and the solving of problems/resolution of questions.

4.2. Learning tasks

Involves the active participation of the student, in a way that the results achieved in the learning process are developed, not taking away from those already set out, the activities are the following:

– **Face-to-face generic activities:**

1. **Theory Classes:** The theoretical concepts of the subject are explained and illustrative examples are developed as support to the theory when necessary.
2. **Practical Classes:** Problems and practical cases are carried out, complementary to the theoretical concepts studied.
3. **Individual Tutorials:** Those carried out giving individual, personalized attention with a teacher from the department. Said tutorials may be in person or online.

– **Generic non-class activities:**

1. Study and understanding of the theory taught in the lectures.
2. Understanding and assimilation of the problems and practical cases solved in the practical classes.
3. Preparation of seminars, solutions to proposed problems, etc.
4. Preparation of the written tests for continuous assessment and final exams.

4.3. Syllabus

The theoretical contents are articulated on the basis of fifteen teaching units, which are organized into two main blocks, as detailed below:

BLOCK A: BASIC GEOLOGY

1. Introduction to Geology. Introducción a la Geología. Importance of Geology in Civil Engineering.
2. Matter and Minerals.
3. Igneous Rocks.
4. Sedimentary Rocks.
5. Metamorphic Rocks.
6. Joints

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7. Introduction to Geological Cartography

BLOCK B: APPLIED GEOLOGY

8. Introduction to Rock Mechanics. Use of rocks in Civil Engineering.

9. Surface and Ground Hydrology. Climatology

10. Introduction to Soil Mechanics

11. Introduction to Natural Risks in Civil Engineering

12. Seismic Risk.

13. Fluvial processes and Flooding Risk.

14. Slope Movements Risk.

15. Karstic Subsidence Risk.

4.4.Course planning and calendar

The subject has 6 ECTS credits, which represents 150 hours of student work in the subject during the trimester, in other words, 10 hours per week for 15 weeks of class.

A summary of a weekly timetable guide can be seen in the following table. These figures are obtained from the subject file in the Accreditation Report of the degree, taking into account the level of experimentation considered for the said subject is moderate.

Activity	Weekly school hours
Lectures	4
Other Activities	6

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Nevertheless the previous table can be shown into greater detail, taking into account the following overall distribution:

— 52 hours of lectures, with 50% theoretical demonstration and 50% solving type problems.

— 4 hours of written assessment tests, two hours per test.

— 90 hours of personal study, divided up over the 15 weeks of the 2nd semester.

4.5. Bibliography and recommended resources