Universidad Zaragoza

Academic Year/course: 2023/24

26434 - Clay Geology

Syllabus Information

Academic year: 2023/24
Subject: 26434 - Clay Geology
Faculty / School: 100 - Facultad de Ciencias
Degree: 296 - Degree in Geology
588 - Degree in Geology
ECTS: 5.0
Year: 4
Semester: First semester
Subject type: Optional
Module:

1. General information

The aim of this subject is that the student acquires a solid formation about clay minerals that will allow them to solve scientific and professional problems related to these materials. . These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (https://www.un.org/sustainabledevelopment/es/), such that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement: SDG 4: Quality Education

2. Learning results

Upon completion of this subject, the student will be able to:

1. Describe, identify and classify the different types of clays and their properties.
2. Relate clay mineral associations to their environment of formation.
3. Transmit knowledge in written and oral form using specific vocabulary.

3. Syllabus

Theory:

Definition of the term clay mineral and its importance.

Mineralogy, composition, properties and methods of study of clays.

Formation of clays in the sedimentary environment, in diagenesis, very low grade metamorphism and hydrothermal.

Industrial clays.

Practices:

Laboratory: Characterization of clays with X-ray diffraction and scanning electron microscopy.

Field: Identify, describe and place clay mineral associations in their geological context.

Seminar: Search and synthesis of information, preparation and presentation of reports related to various aspects of the subject.

4. Academic activities

Activity 1. Learning about the properties, structure, composition and genesis of clays. Methodology: Participative master class (27 hours).

Activity 2. Cabinet and laboratory practices. Characterization of clays with appropriate techniques (10 hours).

Activity 3. Identify, describe and place clay mineral associations in their geological context (5 hours).

Activity 4. Search and synthesis of information, preparation, presentation and defence of reports related to different aspects of the subject (8 hours).

5. Assessment system

Continuous Assessment

A1. There will be two written tests during the term, the first covering topics 1-4 and the second covering topics 5-7, each of these tests will be passed with a grade equal to or higher than 5 out of 10. Students who have passed the tests will only have to take the final exam if they wish to improve their grade.

A2. The students must write a report, as a group, of the work done in the laboratory practices. The report should contain a summary in English. A grade of 5 out of 10 will be required to pass this activity.

A3. Students must submit a report of the field practice. A grade of 5 out of 10 will be required to pass this activity.

A4. Students will be required to make an individual or group presentation on a topic related to clays. A grade of 5 out of 10 will be required to pass this activity.

The final grade will correspond to 45% of the theory grade (A1), 25% of the laboratory practice report (A2), 10% of the field report (A3), 20% of the presentation (A4). The parts passed in a call will be considered as such for the following call of the same academic year, saving the grade obtained.

Overall evaluation

Students who have not followed the subject in person will have to sit for a global evaluation test. The test will assess the same type of learning results expected for students who have followed the subject face-to-face. It will consist of a written test (theoretical-practical questionnaire) on the basic knowledge covered in the subject.