

## 26411 - Mineralogy

### Syllabus Information

**Academic year:** 2023/24

**Subject:** 26411 - Mineralogy

**Faculty / School:** 100 - Facultad de Ciencias

**Degree:** 296 - Degree in Geology

588 - Degree in Geology

**ECTS:** 8.5

**Year:** 2

**Semester:** Annual

**Subject type:** Compulsory

**Module:**

### 1. General information

#### Objectives:

- Understanding and assimilation of the fundamental concepts, theories and models of mineralogy
- Identification and description of minerals from observation on hand specimens (visu) and by microscopy of transmitted and reflected light
- Identification and description of mineral associations and their location in different geological contexts that allow the deduction of the geological processes that generated them.

These goals 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 the achievement of SDG 4: Quality Education.

### 2. Learning results

The student, in order to pass this subject, must demonstrate the following results:

- Clearly explains and relates the fundamental concepts and principles of mineralogy.
- Is able to acquire, analyse, synthesize and interpret data from bibliographic sources in Spanish and English.
- Is able to identify the most important petrogenetic minerals and their associations, to relate them to their formation environment.
- Relates the knowledge acquired with the rest of the disciplines of the Geology Degree and transmits the knowledge in written form and using the specific vocabulary of this discipline.

### 3. Syllabus

#### BLOCK I

T1. Mineralogy

T2. Structure and chemical composition of the Earth.

T3. The mineral genesis and the geological processes.

T4. The magma environment

T5. The sedimentary environment.

T6. The metamorphic environment.

#### BLOCK II

T7. The classification of minerals

T8. Nesosilicates.

T9. Sorosilicates.  
T10. Cyclosilicates.  
T11-14. Inosilicates  
T15-16. Phyllosilicates  
T17-19. Tectosilicates

### **BLOCK III**

T20. Introduction to Non-Silicate Mineralogy  
T21. Native Elements.  
T22. Halides.  
T23. Sulphides  
T24. Oxides and hydroxides.

### **BLOCK IV**

T25. Carbonates, Nitrates and Borates.  
T26. Sulphates, Molybdates and Wolframates.  
T27. Phosphates, arsenates and vanadates.

## **4. Academic activities**

**Master classes: 40 h.** Sessions in which the teacher will explain the subject's syllabus.

**Special laboratory practices: 32 h.** Developed in sessions of approximately 2 h of duration, focused on the identification and description of mineral species by visu and transmitted and reflected light microscopy.

**Seminars: 3 h.** Presentation and defence of papers and exposition of contents not included in the master classes

**Field practices: 10 h.** two field trips related to silicate and non-silicate forming environments will be scheduled.

**Assessment tests. 10 h.**

## **5. Assessment system**

**Classroom development of the subject: continuous evaluation.**

1. Theory (55%). Four written tests, one per block, with the following weighting in the final theory grade: I) 20%; II) 40%, III) 24%, and IV) 16%. Elimination of topics for official calls The final grade in theory must be higher than 5.
2. Papers (10%).
3. Laboratory practices (30%). First four-month period: Visu (25%) + Optics (75%). Second four-month period: Visu (20%) + Transmitted light (20%) + Reflected light (60%). It is necessary to approve each of the parts separately. Final practices grade: first four-month period (50%) + second four-month period (50%).
4. Field practices (5%). Each report: 50% of the total field grade.

### **Global evaluation test**

Students who have not followed the subject in person will have a global evaluation test:

- a. A written test on the basic knowledge of Mineralogy of the program (60% of the grade).
- b. A written test on practical exercises of visu, transmitted light and reflected light microscopy (35% of the grade).
- c. On the day of the global test, students must submit a written work on a topic related to the contents of the subject (5% of the grade)