Universidad Zaragoza

Academic Year/course: 2023/24

28318 - Soil Geography

Syllabus Information

Academic year: 2023/24
Subject: 28318 - Soil Geography
Faculty / School: 103 - Facultad de Filosofía y Letras
Degree: 419 - Degree in Geography and Land Management
ECTS: 6.0
Year: 2
Semester: Second semester
Subject type: Basic Education
Module:

1. General information

This subject aims to provide the student with the theoretical and methodological basis for the study of soil as a key element of the physical environment. It is also intended as an introductory approach to soil classification, mapping and evaluation.

The approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations:

Goal 2: Zero hunger (goals 2.1, 2.3 and 2.4)

Goal 3: Health and well-being (goal 3.9)

Goal 6: Clean water and sanitation (targets 6.3, 6.4, 6.6 and 6.a)

Goal 8: Decent work and economic growth (target 8.4)

Goal 12: Responsible production and consumption (targets 12.2, 12.4 and 12.8)

Goal 13: Climate Action

Goal 15: Life of terrestrial ecosystems (targets 15.1, 15.2, 15.3, 15.4 and 15.5).

2. Learning results

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

* Define the concept of soil and describe its main components and properties and the typical functions of soils in ecosystems.

* Correctly describe soils, identifying soil horizons and their most relevant morphological characteristics.

* Interpret information from analytical and morphological soil data, and from it infer functionally important properties from a functional point of view.

* Explain the main edaphogenetic processes, under what conditions they originate and what types of soils they give rise to.

* To deduce the characteristics of soils from the factors acting in their genesis: starting material, climate, relief, living beings and time of formation.

* Recognize and identify soil types, and classify soils according to a universally accepted classification system accepted.

* Interpret soil maps and recognize soil distribution patterns in the landscape.

* Diagnose the potential uses and risks of soils based on the constraints imposed by their characteristics, using a widely used and accepted evaluation system.

* Analyze, understand and critically evaluate sources of scientific-technical information in the field of Soil Science.

3. Syllabus

The program offered to the student to help him/her achieve the expected results comprises the following topics:

1. Edaphology and Edaphogeography

2. Gaseous and liquid components.

3. Mineral components.

4. Organic components.

5. Physical properties.

6. Chemical properties.

7. Edaphogenetic factors and processes.

8. Soil classification.

9. Soils conditioned by human activities and topography.

10. Soils conditioned by their youth and material of origin.

11. Soils of temperate and cold climates.

12. Soils of arid and steppic climates.

13- Tropical climate soils.

14- Soil mapping and evaluation.

15- Soil degradation and conservation.

4. Academic activities

* Theoretical classes.

* Seminars to solve soil classification and evaluation cases.

* Field work in areas of contrasting edaphodiversity where the variety of soil forming factors and soils will be examined and soil profiles will be described and sampled.

* Laboratory work: sample preparation, determination of color, moisture, texture, pH, carbonates, organic matter and salinity.

* Individual work on the soils studied in the practical activities. It will include: distribution map and brief description of the main soil types, essay on edaphogenetic processes in the study area and presentation ofrepresentative profiles.

5. Assessment system

The student must demonstrate that they have achieved the intended learning results through the following assessment activities:

I Call for Proposals

Global evaluation test (to be taken on the date set in the calendar), including the following:

- Questionnaire of the theoretical and practical contents of the subject(45% of the final grade).

- Resolution of practical cases of soil classification and evaluation (35% of the final grade).

- Submission of individual work consisting of a descriptive report on the factors and processes that form, distribution of the main types and characteristics of the soils analyzed during the practical activities (20% of the course).

The knowledge of the subject taught and its application to particular cases, the ability to synthesise and critically evaluate the information, and the correctness of the expression will be assessed.

II Call for Proposals

Global evaluation test (to be held on the date set in the calendar), with the same procedure and criteria as in the first call.