

## 28318 - Soil Geography

### Syllabus Information

**Academic Year:** 2019/20

**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

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.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

The course on "Soil Geography" is considered of basic training and is aimed at identifying, interpreting and analysing the soil system as a major element of the physical environment. Course contents are acquired through a fundamental theoretical framework and participatory lectures. Moreover, as appropriate for environmental-related knowledge, special attention is paid to field work, and specific practical work is carried out in the laboratory. Field work is aimed at describing and sampling soils and relating them with other elements of the landscape. Laboratory activities focus on analytical features with special interest in land evaluation and the assessment of soil degradation.

In addition, an individual activity of synthesis of information is proposed to the student, who, on the basis of the information collected during the practical activities, must create a preliminary map or sketch of the distribution of the main soil types in a certain study area. To do this, the student will rely on the relationship between the distribution of soils and of other elements of the physical environment (e.g., vegetation, relief), which are addressed at the same time during the same semester and academic year within the course on Physical Geography Applied on Land Planning I: the Relief and the Living Beings. Through this activity, the student will test his/her capacity of processing and interpreting information concerning different elements of the physical environment, and his/her mastery of the basics concepts and terms in Soil Science by applying the subject matter to a real-life context.

#### 4.2.Learning tasks

The course includes the following learning tasks:

- **Lectures** (36 hours).
- **Practice sessions** (9 hours). Discussing and solving practical case studies of soil classification and evaluation.

- **Lab sessions** (5 hours). The laboratory work includes the following activities: Preparation of soil samples; establish the soil color, pH, carbonate, texture (densitometric and field methods), organic matter, salinity and aggregate stability.
- **Field work** (10 hours). The field work will be conducted in spaces with marked soil diversity, and will allow the students to study *in situ* a variety of forming factors and the soils resulting from them, and to practice soil morphological description and collection of soil samples.
- **Guided tasks**. Each student will do an individual assignment on the soils studied during the practical activities of the course. It will include: a short dissertation on the soil forming factors and processes occurring in a certain study area; a description and a preliminary map or sketch of the main soil types in the area; the presentation and interpretation of a soil profile representative of the area and studied during the field and laboratory work. The teacher will guide the students work, check the activity's progress and evaluate the student's mastery of the subject matter involved in the activity, through on-line and/or scheduled face-to-face tutorials. The work will be finally submitted in paper and digital format at the end of the course.

### 4.3.Syllabus

The course will address the following topics:

1. Soil Geography and Soil Science: definition and aims
2. How do we study soils?
3. Components of the soil gaseous and aqueous phases: Water and air in the soil
4. Components of the soil solid phase: minerals and organic matter
5. Physical properties of the soil
6. Chemical properties of the soil
7. Ecological factors of soil formation
8. Soil forming processes
9. Soil classification
10. Major soil types of Europe and the world
11. Soil information: maps and soil information systems
12. Soil evaluation
13. Soil degradation and conservation

### 4.4.Course planning and calendar

The course is divided into 4 sections. The first section (topics 1-2) works as an introduction to the course and runs during the first 2 weeks of the semester. The second section includes the topics of soil components and properties (topics 3-6) and runs during the following 4 weeks. The third section covers the topics of soil genesis and diversity (topics 7-10); it develops during the following 10 weeks. The final section (topics 11-13) includes the topics of soil evaluation and conservation, and runs during the final 2 weeks of the course.

Interactive activities of soil classification and evaluation will develop simultaneously to the lecture sessions during the final 5 weeks of the semester.

Individual works will be delivered at the same date, time and place of the final test.

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Facultad de Filosofía y Letras website (<https://fyl.unizar.es/horario-de-clases#overlay-context=horario-de-clases>; <https://fyl.unizar.es/calendario-de-examenes>).

### 4.5.Bibliography and recommended resources

Basic bibliography

- Ferreras Chasco, Casildo. Biogeografía y edafogeografía / C. Ferreras Chasco, C. Fidalgo Hijano . - [3<sup>th</sup> reprint.] Madrid : Sintesis, D.L. 1991 (reimp. 2009)
- Porta Casanellas, Jaime. Introducción a la edafología : uso y protección del suelo / Jaime Porta Casanellas, Marta López-Acevedo Reguerín, Rosa M. Poch Claret Madrid, [etc.] : Mundi-Prensa, 2008
- Porta Casanellas, Jaime. Edafología para la agricultura y el medio ambiente / Jaime Porta Casanellas, Marta López-Acevedo Reguerín, Carlos Roquero de Laburu . 3th ed., rev. and exp. Madrid [etc.] : Mundi-Prensa, 2003

Recommended bibliography

- Porta Casanellas, Jaime. Agenda de campo de suelos : información de suelos para la agricultura y el medio ambiente/ Jaime Porta Casanellas, Marta López-Acevedo Reguerín Madrid : Mundi-Prensa, 2005
- Itinerarios edáficos por el Alto Aragón / David Badía Villas (coord.) ; José Antonio Cuchi... [et al.] Huesca : Instituto de Estudios Altoaragoneses, D.L. 200

- Soil Atlas of Europe / European Commission; European Soil Bureau Network Luxembourg : European commission, 2005