

25245 - Soil and land evaluation

Información del Plan Docente

Academic Year	2018/19
Subject	25245 - Soil and land evaluation
Faculty / School	201 - Escuela Politécnica Superior
Degree	277 - Degree in Environmental Sciences 571 - Degree in Environmental Sciences
ECTS	6.0
Year	
Semester	Four-month period
Subject Type	Optional
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

This subject is offered in the [English Friendly](#) form

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 methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, laboratory sessions, fieldwork and online activities.

This course emphasizes the importance of soil as natural resource, which provides many ecosystem services for environmental and food security and therefore the human well-being. This subjects brings together some of the systems

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developed to classify and evaluate soils and lands. It is mainly addressed for the students interested in interpreting a soil survey and to compare soils according agricultural, range or woodland land-uses.

4.2.Learning tasks

This course is organized as follows:

- Lectures
- Problem-solving sessions
- Laboratory sessions
- Fieldwork
- Exams
- Tutorials

4.3.Syllabus

This course will address the following topics:

Lectures

- Topic 1. Soil ecosystems services.
- Topic 2. Soil description for soil classification and land evaluation.
- Topic 3. Soil types and their formation: factors and processes.
- Topic 4. World Reference Base (WRB) for soil resources: an international soil classification system.
- Topic 5. Soils and land evaluation systems for land planning
- Topic 6. Soil maps interpretation
- Topic 7. Diagnosis of soil quality for rehabilitation projects
- Topic 8. Soil conservation practices
- Topic 9. Fire-affected soils and emergency measures in controlling post-fire degradation

Laboratory sessions

1. Preparing soil samples: Drying, sieving, grinding and packing. Qualitative tests.
2. Physical properties: Particle size analysis, porosity, soil aggregate stability.
3. Chemical properties: pH, electrical conductivity, organic matter, carbonates, gypsum.
4. Biological properties: Soil respiration, enzymatic activities
5. Final report

Fieldwork

1. Soil and landscape relationships.
2. Management of soils

4.4.Course planning and calendar

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lectures	L1	T1	T2	T2	T3	T3	T4	T4	T5		T6	T7	T7	T8	T9	T10

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Hours	2	2	2	2	2	2	2	2	2		2	2	2	2	2	2
Problems								T4	T5					T7	T8	T
Hours								2	2					2	2	2
Lab			P1	P2	P3	P4	P5									
Hours			2	2	2	2	2									
Field trips								S1						S2		
Hours								5						5		
Examination																
Tutored work (H)			2		2	2	2	2	2		2		2	2	2	2

T: topics; H: hours

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 Faculty of Sciences website and Moodle.

4.5. Bibliography and recommended resources

BB

Atlas nacional de España : geología, geomorfología y edafología / Instituto Geográfico Nacional . Madrid : Centro Nacional de Información Geográfica, D.L. 2006

BB

Base referencial mundial del recurso suelo : un marco conceptual para clasificación, correlación y comunicación internacional / [editada por Erika Michéli, Peter Schad y Otto Spaargaren] . Roma : Organización de las Naciones Unidas para la Agricultura

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- BB y la Alimentación, 2008
Keys to soil taxonomy / by Soil Survey Staff . - [9th ed], reimp. [Washington, D.C.] : U.S. Dept. of Agriculture, Natural Resources Conservation Service, 2003 (reimp. 2005)
Porta Casanellas, Jaime. Edafología para la agricultura y el medio ambiente / Jaime Porta Casanellas, Marta López-Acevedo Reguerín, Carlos Roquero de Laburu . - 3ª ed., rev. y amp. Madrid [etc.] : Mundi-Prensa, 2003
- BC Badía Villas, David. Los suelos en Fraga : cartografía y evaluación / David Badía Villas . Huesca : Instituto de Estudios Altoaragoneses, D.L. 1989
- BC Badía Villas, David. Suelos del Pirineo Central : Fragen / por David Badía Villas, Clara Martí Dalmau Huesca : INIA : UZ : CPNA : IEA, 1999
- BC Efectos de los incendios forestales sobre los suelos de España : el estado de la cuestión visto por los científicos españoles / Editores, Artemi Cerdà y Jorge Mataix-Solera Valencia : Universitat de València, Cátedra Divulgación de la Ciencia , 2009
- BC El Aiguabarreig : suelos y paisajes : un espacio natural en la confluencia de los ríos Cinca, Segre y Ebro / David Badía... [et al.] Zaragoza : Consejo de Protección de la Naturaleza de Aragón, D.L. 2008
- BC Itinerarios edáficos por el Alto Aragón / David Badía Villas (coord.) ; José Antonio Cuchi... [et al.] . Huesca : Instituto de Estudios Altoaragoneses, D.L. 2009
- BC Los suelos de los viñedos de la Denominación de Origen Somontano / David Badía Villas ...[et al.] Zaragoza : Prensas Universitarias de Zaragoza, 2006

The updated recommended bibliography can be consulted in:
<http://psfunizar7.unizar.es/br13/egAsignaturas.php?id=10991>