



DEGREE CURRICULUM
**DISTURBANCES AND
REHABILITATION OF SOILS**

Coordination: POCH CLARET, ROSA MARIA

Academic year 2021-22

Subject's general information

Subject name	DISTURBANCES AND REHABILITATION OF SOILS			
Code	12197			
Semester	1st Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Master's Degree in Soil and Water Management	2	OPTIONAL	Attendance-based
Course number of credits (ECTS)	4			
Type of activity, credits, and groups	Activity type	PRACAMP	PRAULA	TEORIA
	Number of credits	1	1	2
	Number of groups	1	1	1
Coordination	POCH CLARET, ROSA MARIA			
Department	ENVIRONMENT AND SOIL SCIENCES			
Teaching load distribution between lectures and independent student work	1 credit = 15 additional hours of personal work.			
Important information on data processing	Consult this link for more information.			
Language	spanish			
Distribution of credits	<ol style="list-style-type: none"> 1. Fertility of forest soils: evaluation and improvement. Romanyà (2h) 2. Soil conservation measures in basins. Study of cases. Ramos (4ht + 3hp) 3. Rehabilitation of areas affected by erosion and mining. Case study: coal mining in arid zones. Control of runoff in waste heaps. Soil conservation in tropical areas. Bioengineering. Poch (8ht + 5hp) 4. Rehabilitation of areas affected by fires. Soil and vegetation responses to fire and strategies for restoring soils affected by fires in dry climate forests. Romanyà (4h) 5. Evaluation of surface dynamics and techniques for its control after a forest fire. Olarieta (6h) 6. Forest hydrological restoration of basins and avalanche control. Fernandez (8h) <p>2,6 credits theory - 1,4 credits practical</p>			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
FERNANDEZ RIVERA, FRANCISCO	francisco.fernandez@udl.cat	,8	
OLARIETA ALBERDI, JOSE RAMON	joseramon.olarieta@udl.cat	,6	
POCH CLARET, ROSA MARIA	rosa.poch@udl.cat	1,3	
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ROMANYA SOCORO, JOAN	jromanya@ub.edu	,6	

Learning objectives

People who pass the subject will be able to:

- identify and characterize sites altered by natural phenomena (floods, erosion, instability of materials, avalanches) or anthropic (civil works, mining or fires, among others), considering them as dynamic components of ecosystems;
- propose and design rehabilitation and / or restoration measures for these sites; and
- diagnose the quality of soils as a factor of forest production and propose measures for its conservation and improvement

Competences

Within the master's degree, the specific skills to acquire are:

CE1. Generate and interpret soil and water data

CE3. Manage forest areas preserving or improving the quality of soils and waters.

CE4. Control degradation and efficiently use soil and water resources

CE7 Evaluate hydrological, geomorphological and edaphic risks, and plan measures to reduce them and minimize their impacts

Subject contents

1. Soil conservation measures in basins. Study of cases. Ramos (4ht + 3hp)
2. Rehabilitation of areas affected by erosion and mining. Case study: coal mining in arid zones. Control of runoff in waste heaps. Soil conservation in tropical areas. Bioengineering. Poch (8ht + 5hp)
3. Rehabilitation of areas affected by fires. Soil and vegetation responses to fire and strategies for restoring soils affected by fires in dry climate forests. Romanya (6h)
4. Evaluation of surface dynamics and techniques for its control after a forest fire. Olarieta (6h)
5. Forest hydrological restoration of basins. Control of the torrential phenomenon through actions in the riverbed and in the basin. Snow, characteristics and types of avalanches, actions to correct and control avalanches. Fernandez (8h)

Methodology

Theoretical classes, case studies, field practices.

Development plan

CR: Concepción Ramos

FF: Francisco Fernández

RMP: Rosa M Poch

JR: Joan Romanyà

JRO: José Ramon Olarieta

	Lunes	Martes	Miercoles	Jueves	Viernes
	4	5	6	7	8
		16-18 h: PRS (CR)	16-18 h: PRS (RMP)	16-19 h: PRS (RMP)	
	18-20 h: PRS (FF)	18-20 h: PRS (RMP)	18-20 h: PRS (FF)		
	11	12	13	14	15
			18-20 h: PRS (FF)	18-20 h: PRS (CR)	
	18	19	20	21	22
oct 2021		16-19 h: PRS (CR)			
	18-20 h: PRS (FF)				
	25	26	27	28	29
		8-14 h. sortida PRS (RMP)	16-18 h: PRS (JR)	16-18h: PRS (JR)	8-15 h: sortida PRS (JRO)
	1	2	3	4	5

Evaluation

The evaluation of the subject consists of:

Individual written exam (40%), reports various practical cases and field trips proportional to the number of credits taught (60%)

Bibliography

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ROMANYÀ, J., FONS, J., SAURAS T., GUTIÉRREZ E., VALLEJO V.R. 2005. Soil-plant relationships and tree distribution in old growth *Nothofagus betuloides* and *Nothofagus pumilio* forests of Tierra del Fuego. *Geoderma* 124: 169-180

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* TONGWAY, D. AND LUDWIG, J. (2002) Australian semiarid lands and savannas. In: Handbook of Ecological Restoration. vol. 2: Restoration in Practice (eds. M.R. Perrow and A.J. Davy), pp. 486–502. Cambridge University Press, Cambridge.

VALLADARES F., GIANOLI E. 2007. How much ecology do we need to know to restore Mediterranean ecosystems? *Restoration Ecology* 15:363-368.

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