

Syllabus Information

Academic Year: 2021/22

Subject: 25266 - Restauración de ecosistemas

Faculty / School: 201 - Escuela Politécnica Superior

Degree: 571 - Degree in Environmental Sciences

ECTS: 6.0

Year: 3 and 4

Semester: First Four-month period

Subject Type: Optional

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

Theoretical sessions:

The teacher will make a lecture of each topic asking for the participation of the students. The student will have bibliographic material and the powerpoint slides of each topic.

On the other hand, there will be conference sessions given by external experts.

Practical sessions:

Practical activities will focus on the study and analysis of completed restoration projects visited during the field trips. At the end, the students will prepare a report giving an opinion on some of them. Workshop sessions will be developed to guide students in the preparation of the report.

4.2. Learning tasks

The program offered to the students to help them to achieve the expected results includes the following activities:

Theory sessions in the classroom:

The teacher providea presentation, as well as additional bibliographic material for each session. Available on the Moodle platform, which must be previously studied, at least by the students with continuous assessment.

The sessions will include interventions of the students and lectures by the teacher. Others will correspond to participations of invited experts and and seminars prepared by the students.

Field trips:

We will take two field trips. One of two days (Friday and Saturday) and another of one day (8 hours). We will visit several restoration projects to meet with some stakeholdres in each project. For these visits, bibliographic material will be available at moodle. A booklet will be provided with activities to be carried out during and after the fieldtrips. Students must submit a report.

Practice sessions:

Three two-hour practice sessions will be held to guide students.

Tutorials:

To monitor the theory and practice activities, the students are invited to take part in personalized tutorials both individually or in groups.

4.3. Syllabus

Theory:

Module I. Introduction to the restoration of degraded ecosystems.

Module II. Scientific bases of the restoration

Module III. Restoration techniques

Module IV. Analysis of practical cases

Practice:

Contents and structure of a restoration project

Keys to the execution, management and development of a restoration project

Analysis of restoration projects in the field of mining, agroecosystems, forests and pastures, wetlands, urban environments and linear infrastructures.

4.4. Course planning and calendar

Type of activity / Week	1 15-17 sep	2 20-24 sep	3 27 sep-1 oct ⁽¹⁾	4 4-8 oct	5 11-15 oct	6 18-22 oct ⁽²⁾	7 25-29 oct	8 2-5 nov
					Non-school Oct 11 (Mon) Holiday Oct 12 (Tuesday)			

Face-to-face activity

Theory	2	2	4	2		2	2	2
Problems								
Lab practices								
Group working		2						
Salidas de prácticas								8
Tutorías ECTS								
Evaluación								

No Face-to-face activity

Individual work	5	4	5	5	5	2,5	4	
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Group work

1,5

TOTAL 7 8 9 7 5 6 6 10

4.5. Bibliography and recommended resources

- BB** Ecological restoration : a global challenge / edited by Francisco A. Comin. Cambridge : Cambridge University Press, 2010 (reimp. 2011)
- BB** Gibson, Paul J. Introductory remote sensing, principles and concepts / Paul J. Gibson ; with contributions to the text by Clare H. Power and Website development by John Keating. [London] : Routledge, 2000
- BB** Gómez Orea, Domingo. Recuperación de espacios degradados / Domingo Gómez Orea. 2ª ed. Madrid : Ediciones Mundi-prensa, 2014
- BB** Handbook of ecological restoration. Vol. 1, Principles of restoration / edited by Martin R. Perrow and Anthony J. Davy. Cambridge : Cambridge University Press, 2002
- BB** Handbook of ecological restoration. Vol. 2, Restoration in practice / edited by Martin R. Perrow and Anthony J. Davy. Cambridge : Cambridge University Press, 2002
- BB** Harris, James A. Land restoration and reclamation : principles and practice / James A. Harris, Paul Birch and John P. Palmer. Harlow (Essex) : Longman, 1996 (reimp. 1998)
- BB** Reclaimed land : erosion control, soils and ecology / editor Martin J. Haigh. Rotterdam : A. A. Balkema, 2000
- BB** Restauración de ecosistemas mediterráneos : [ponencias presentadas en el simposio ?Restauración de ecosistemas en ambientes mediterráneos. Posibilidades y limitaciones?, 20 y 21 de septiembre de 2001, Alcalá de Henares] / Asociación Española de Ecología Terrestre ; José Ma. Rey Benayas, Tíscar Espigares Pinilla, José Manuel Nicolau Ibarra (editores). [Alcalá de Henares] : Universidad de Alcalá, Servicio de Publicaciones, D.L. 2003
- BB** Restoration ecology : the new frontier / edited by Jelte van Andel and James Aronson. 2nd ed. Oxford : Wiley-Blackwell, cop. 2012
- BC** Castro Díez, Pilar. Plan de restauración del bosque de ribera en la Reserva Natural de los Galachos (Zaragoza) / Pilar Castro Díez, Joaquín Guerrero Campo, Miguel Angel Muñoz Yanguas. [Zaragoza] : Consejo de Protección de la Naturaleza de Aragón, 2001
- BC** Catalán Bachiller, Gabriel. Semillas de árboles y arbustos forestales / Gabriel Catalán Bachiller. Madrid : ICONA, D.L. 1991
- BC** Restauración hidrológico forestal de cuencas y control de la erosión / [dirección y coordinación, Filiberto López Cadenas de Llano ; colaboradores, Gonzalo Fernández Tomás ... et al.]. Madrid : TRAGSA : TRAGSATEC : Mundi-Prensa, 1994

LISTADO DE URLs:

Mansourian, S., Wallauri, D., Dudley, N. (2005). Forest restoration in landscapes. New York: Springer and WWF

[
http://www.bf.uni-lj.si/fileadmin/groups/2716/downloads/%C4%8Clanki_vaje/2.VS%C5%A0/Mansurian_Forest_restoration_I
]

Restauración de ecosistemas. Web con contenidos de restauración

[<https://www.restauraciondeecosistemas.com/>]

Valladares, F., Gil, P., Forner, A. (2017): Bases científico-técnicas para la estrategia estatal de infraestructura verde y de la y restauración ecológicas. Madrid: Ministerio de Agricultura, Pesca y Alimentación

[https://www.miteco.gob.es/es/biodiversidad/temas/ecosistemas-y-conectividad/basescientifico-tecnicasseeivcre_tcm30-479]

The updated recommended bibliography can be consulted in: <http://psfunizar10.unizar.es/br13/egAsignaturas.php?id=11009>