



Universitat de Lleida

DEGREE CURRICULUM  
**ST IN LANDSCAPE ECOLOGY  
AND BIOLOGICAL  
CONNECTIVITY**

Coordination: VEGA GARCÍA, CRISTINA

Academic year 2019-20

## Subject's general information

<b>Subject name</b>	ST IN LANDSCAPE ECOLOGY AND BIOLOGICAL CONNECTIVITY			
<b>Code</b>	111008			
<b>Semester</b>	ANUAL CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Master's Degree Erasmus Mundus in Spatial and Ecological Modelling in European Forestry	2	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	5			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRACAMP	PRALAB	TEORIA
	<b>Number of credits</b>	1.5	1.5	2
	<b>Number of groups</b>	1	1	1
<b>Coordination</b>	VEGA GARCÍA, CRISTINA			
<b>Department</b>	AGRICULTURAL AND FOREST ENGINEERING			
<b>Teaching load distribution between lectures and independent student work</b>	1 ects is 10h work in the class/lab, and 15h personal work			
<b>Language</b>	English only			
<b>Distribution of credits</b>	30% Theory, 70% Practice			

## Teaching staff

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
SERRANO ENDOLZ, LUIS	serrano@pvcf.udl.cat	1	
VEGA GARCÍA, CRISTINA	cvega@eagrof.udl.cat	4	

## Subject's extra information

Students taking this course will develop their expertise in the application of spatial analysis techniques to characterize the structure of forest/land cover patches and their changes at the landscape level, informing landscape management for conservation goals.

## Learning objectives

To analyze ecological and cultural landscape shaping factors in the Mediterranean Region.

## Significant competences

To acquire hands-on experience in the diagnosis of landscape structure and landscape dynamics.

To be able to apply relevant quantitative tools that allow incorporating landscape ecological objectives in forest and protected area management and nature conservation.

## Subject contents

1. Landscape definition. Spacing and Perception. Structure: patch, matrix, corridor. Classification principles. Models and theories in LE.
2. Processes: Disturbance. Fragmentation. Connectivity.
3. Heterogeneity and biological diversity. Space, time and function.
4. Landscape pattern. Quantitative methods in LE (metrics).
5. Scale of patterns and processes.
6. Landscape dynamics.
7. Landscape evaluation methods. Public participation.
8. Landscape management and conservation: quantitative tools for decision-making support.
9. Landscape design.

## Methodology

The classes are organized by the students according to flipped learning strategies with materials provided by the instructors. Study cases are analysed, individually and jointly, for formative evaluation. Lab exercises are conducted, and field trips allow exploring Med landscapes.

## Development plan

Scheduling is by agreement with the students at the beginning of the course.

## Evaluation

Grading is based on the resolution of individual study cases and collaborative work, presentations and other activities (seminars, labs, etc.).

## Bibliography

Basic Bibliography for Landscape Ecology: Books

ASHTON DREW, C., WIERSMA, Y.F., HUETTMANN F., editors. 2011. Predictive species and habitat modeling in landscape ecology: concepts and applications. Springer, New York.

BISSONETTE, J.A. & I. STORCH. 2003. Landscape ecology and resource management: linking theory with practice. Island Press, Washington, D.C.

DALE, V.H. & R.A. HAEUBER (Eds.). 2001. Applying ecological principles to land management. Springer-Verlag, New York.

FARINA, A. 1998. Principles and Methods in Landscape Ecology. Towards a science of Landscape. 2nd Ed. Landscape Series n.3. Springer, Dordrecht, The Netherlands.

FARINA, A. 2000. Landscape ecology in action. Kluwer Academic publishers.

FARINA, A. 2006. Principles and methods in landscape ecology: toward a science of landscape. Springer Landscape Series Vol. 3.

FORMAN, R.T.T. 1998. Land Mosaics. The Ecology of landscapes and regions. Cambridge University Press, Cambridge.

GERGEL, S.E. & M.G. TURNER. 2002. Learning landscape ecology. A practical guide to concepts and techniques. Springer-Verlag, New York.

GUZTWILLER, K.J. 2002. Applying landscape ecology in biological conservation. Springer-Verlag, New York.

HARRIS, L.D. 1984. The fragmented forest: island biogeography and the preservation of biotic diversity. University of Chicago Press.

KLOPATEK, J.M. & GARDNER, R. H. 1999. Landscape ecological analysis: issues and applications. Springer.

LAFORTEZZA, R., J. CHEN, G. SANESI & T.R. CROW (Eds.). 2008. Patterns and processes in forest landscapes. Multiple use and sustainable management. Springer.

LIU, J. HULL V., MORZILLO, A.T., & WIENS, J.A. (Eds.). 2011. Sources, Sinks and Sustainability Cambridge Studies in Landscape Ecology. Cambridge University Press.

LUCAS, O.W.R. 1991. The design of forest landscape. Oxford University Press. Oxford.

MCGARIGAL, K., and B.J. MARKS. 1995. FRAGSTATS: spatial pattern analysis program for quantifying landscape structure. General Technical Report PNW-GTR-351, USDA Forest Service, Pacific Northwest Research

Station, Portland, Oregon.

NAVEH, Z. and LIEBERMAN, A. 1994. Landscape Ecology: Theory and application. 2nd Ed. Springer-Verlag.

PERERA A.H., BUSE L., and CROW T. (EDS.). 2007. Forest Landscape Ecology: Transferring Knowledge to Practice. Springer-Verlag New York Inc.

TURNER, M.G. 1987. Landscape heterogeneity and disturbance. Springer-Verlag, Berlin.

TURNER, M.G. AND R.H. GARDNER. 1991. Quantitative methods in landscape ecology: the analysis and interpretation of landscape heterogeneity. Springer-Verlag, Berlin.

TURNER M.G., R.H. GARDNER and R.V. O'NEILL. 2001. Landscape Ecology in Theory and Practice. Pattern and Process. Springer-Verlag, New York.

WIENS, J., MOSS M.R., Turner, M.G. and Mladenoff D.J. 2006. Foundation Papers in Landscape Ecology. Columbia University Press.

You can access these books through the Catalog in our digital library system: <http://www.bib.udl.es/>

Journals: Landscape Ecology, Landscape and Urban Planning, Landscape Research.

You can access Journals and papers or search for them in our digital library system, through Articles/e-Revistas/Bases de dades in the same page.

Series: Cambridge Studies in Landscape Ecology

[http://www.cambridge.org/us/knowledge/series/series\\_display/item5692684/?site\\_locale=en\\_US](http://www.cambridge.org/us/knowledge/series/series_display/item5692684/?site_locale=en_US)