Universitat de Lleida

GUIA DOCENT

FOREST PHYSIOLOGY

Coordinació: SERRANO ENDOLZ, LUIS

Any acadèmic 2017-18

Informació general de l'assignatura

Denominació	FOREST PHYSIOLOGY
Codi	11381
Semestre d'impartició	ANUAL AVALUACIÓ CONTINUADA
Caràcter	Grau/Màster: Màster Universitari Erasmus Mundus en Gestió Forestal i de Recursos Naturals al Mediterrani (MEDfOR) — Curs: 1 — Caràcter: OPTATIVA — Modalitat: Presencial
Nombre de crèdits ECTS	3
Grups	1GG
Crèdits teòrics	0
Crèdits pràctics	0
Coordinació	SERRANO ENDOLZ, LUIS
Departament/s	PRODUCCIO VEGETAL I CIENCIA FORESTAL
Informació important sobre tractament de dades	Consulteu aquest enllaç per a més informació.

Professor/a (s/es)	Adreça electrònica professor/a (s/es)	Crèdits impartits pel professorat	Horari de tutoria/lloc
AGUILERA DELGADO, MÒNICA	monica.aguilera@udl.cat	2	
SERRANO ENDOLZ, LUIS	serrano@pvcf.udl.cat	1	

Objectius acadèmics de l'assignatura

To know the main factors that are related to growth of woody plants and the particular constraints imposed by Mediterranean conditions: shortage of water, nutrient scarcity and high radiation and temperature stresses. To understand the consequences of management and cultural practices on forest ecology.

•**Tree growth requirements**

•**Carbon balance of forests:**
Concepts and methods

•**Abiotic stresses in Mediterranean communities:**
Effects and plant responses

•**Management and Forest Ecology:**
Traditional practices and recent Forest Change

Competències

The student will learn to integrate physiological information as a tool to solve ecological and management problems.

Continguts fonamentals de l'assignatura

Theoretical part

1-Introduction: plant structure and function

2-Plant water relations

3-Photosynthesis and carbon balance

4-Paper discussions: management and Global change

Practical part

5-Measurement techniques

6-Fieldwork

Eixos metodològics de l'assignatura

2/3 Theory and seminars

1/3 Field work

Fieldwork:
Instrumentation
and techniques in a case study

- Comparison of different species
at Botanical garden (*Arboretum*)

Seminar:
Oral presentations, discussion of results

- Discussion of selected papers

- Discussion and oral presentations of data from fieldwork

Sistema d'avaluació

Class work (15%)

Oral presentation (35%)

Final exam (50%)

Bibliografia i recursos d'informació

LITERATURE

Taiz, L., & Zeiger, E. (2010). Plant Physiology, 5th Ed. Sinauer. USA.

Landsberg, J. J., & Sands, P. (2010). Physiological ecology of forest production: principles, processes and models (Vol. 4). Academic Press.

Rodà, F. (Ed.). (1999). *Ecology of Mediterranean evergreen oak forests* (Vol. 37). Springer.

Ne'eman, G., & Trabaud, L. (Eds.). (2000). *Ecology, biogeography and management of Pinus halepensis and P. brutia forest ecosystems in the Mediterranean Basin*. Postbus 321, 2300 AH Leiden, The Netherlands: Backhuys Publishers.

Zavala, M. A., Espelta, J. M., & Retana, J. (2000). Constraints and trade-offs in Mediterranean plant communities: the case of holm oak-Aleppo pine forests. *The Botanical Review*, *66*(1), 119-149.

USEFUL LINKS

Plant structure & function
http://www.phschool.com/science/biology_place/biocoach/plants/basic.html

PLANT WATER RELATIONS

Landsberg_ForestHydrology

http://www.sciencedirect.com/science/article/pii/B9780124359550500042

Diffussion & osmosis
http://www.phschool.com/science/biology_place/labbench/lab1/concepts.html

Transpiration

http://www.phschool.com/science/biology_place/labbench/lab9/intro.html

Water potential

http://www.phschool.com/science/biology_place/labbench/lab1/watpot.html

CARBON BALANCE & PHOTOSYNTHESIS

Landsberg_CarbonBalanceForests

http://www.sciencedirect.com/science/article/pii/B9780124359550500054

Tutorial Photosynthesis

http://www.hartnell.edu/tutorials/biology/photosynthesis.html

QUIZ Photosynthesis

http://www.hartnell.edu/tutorials/biology/photosynthesis%20quiz/photosynthesisquiz1.html