Course Unit	Advanced Forest Protection		Field of study	Silviculture and Wildlife Management	
Master in	Management of Forest Resources		School	School of Agriculture	
Academic Year	2022/2023	Year of study 2	Level	2-2	ECTS credits 3.0
Type	Semestral	Semester 1	Code	6363-352-2103-00-22	

Workload (hours)	81	Contact hours	T -	TP 45	PL -	TC -	S -	E -	OT 10	O -

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s): Maria Alice Silva Pinto

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
To Identify and recomend appropriate control methods of the major insect pests and diseases of forest stands, nurseries and trees of green urban areas.

Prerequisites

Before the course unit the learner is expected to be able to:
N/A

Course contents

Major insect pests and diseases of roots, stem/branches, leaves, and seeds of forest stands and trees of urban areas. Identification and diagnosis, life cycle, hosts, damage and control methods.

Course contents (extended version)

1. Major pests of forests and urban trees
   - Pests of the roots, stem/branches, leaves and seeds
   - Biology, symptoms and signals, natural enemis, hosts, losses and control methods
2. Major diseases of forests and urban trees
   - Diseases of the roots, stem/branches, leaves and seeds
   - Biology, symptoms and signals, natural enemis, hosts, losses and control methods

Recommended reading

1. Dajoz R. 2001. Entomologia forestal: los insectos y el bosque. Ediciones Mundi-Prensa.
2. Romanyik N. & Cadahia D. 2003. Plagas de insectos en las masas forestales españolas. Ediciones Mundi-Prensa.
3. Sousa E. M. , Evangelista M. , Rodrigues J. M. (Ed.). 2008. Identificação de pragas e doenças em povoamentos florestais. DGRF.
4. Tattar T. A. 1989. Diseases of shade trees. (revised edition). Academic Press.

Teaching and learning methods

Conventional lectures; use of power point presentations and internet resources. Laboratory classes. Field trips: in situ diagnosis of forest insect pests and diseases. Course materials available in the e-learning plataform.

Assessment methods

1. Continuous evaluation - (Regular) (Final)
   - Final Written Exam - 75%
   - Presentations - 25% (Oral presentation of a forest pests and a forest disease chosen by the student)
2. Comprehensive exam - (Regular) (Supplementary, Special)
3. Comprehensive exam - (Student Worker) (Final, Supplementary, Special)

Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation

Maria Alice Silva Pinto	Amilcar António Teiga Teixeira	Felícia Maria Silva Fonseca	Maria Sameiro Ferreira Patrício
12-12-2022	12-12-2022	12-12-2022	19-12-2022