

Course Unit	Forest soils	Field of study	Mathematics & Statistics
Master in	Management of Forest Resources	School	School of Agriculture
Academic Year	2023/2024	Year of study	1
Type	Semestral	Semester	1
Workload (hours)	162	Contact hours	T - TP - PL - TC - S - E - OT - O -
		Level	2-1
		Code	6363-808-1105-00-23
		ECTS credits	6.0

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) Tomás de Aquino Freitas Rosa Figueiredo

#### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Know the major limitations and potential for forest land use.
2. Understand the effects of anthropic disturbances on forest ecosystems and forestry production in soil characteristics.
3. Know the dynamics of organic residues decomposition, nutrients cycling and carbon sequestration in forest ecosystems.
4. Develop critical capacity in the sense of decision-making in the conservation of forest soils and the environment.

#### Prerequisites

Before the course unit the learner is expected to be able to:  
Basics of geology and Pedology

#### Course contents

The soil as a means to the growth of trees. Land use capacity. Development and soil characteristics under forest cover. Soil technology in forest ecosystems. Soil fertility management in forest ecosystems. Soils associated with the major forest ecosystems. Effects of fire on soils. Carbon sequestration in forest soils. Changes in land use. Agro-forestry techniques for soil conservation.

#### Course contents (extended version)

#### Recommended reading

1. Weil, R. , Brady, N. 2016. The nature and properties of soils. 15ª ed. , Pearson, New York.
2. Duorák, J. , Novák, L. (Editors). 1994. Soil Conservation and Silviculture. Elsevier, London.
3. Gonçalves, J. L. M. , Benedetti, V. 2000. Nutrição e Fertilização Florestal. IPEF, Brasil.
4. Binkley, D. , Fisher, R. F. 2012. Ecology and Management of Forest Soils. Fourth edition, Wiley-Blackwell.
5. Apontamentos elaborados pela docente da UC.

#### Teaching and learning methods

Lectures are essentially expository. Practical classes, have at first a brief exhibition followed by targeted action. The tasks set and initiated in practical classes are materialized in practical work, developed and completed outside the classroom. The students orientation is guaranteed continuously.

#### Assessment methods

1. With practical component - (Regular, Student Worker) (Final, Supplementary)
  - Practical Work - 42% (Corresponds to 2. 5 ECTS.)
  - Final Written Exam - 58% (Corresponds to 3. 5 ECTS. The exam includes only the theoretical component of the subject)
2. No practical component - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 100% (The exam includes theoretical and practical component of the subject)

#### Language of instruction

Portuguese, with additional English support for foreign students.

#### Electronic validation

Tomás de Aquino Freitas Rosa Figueiredo	Margarida Maria Pereira Arrobas Rodrigues	Felícia Maria Silva Fonseca	Maria Sameiro Ferreira Patrício
22-01-2024	22-01-2024	23-01-2024	23-01-2024