

Course Unit	Nature Conservation	Field of study	Environmental Science
Master in	Management of Forest Resources	School	School of Agriculture
Academic Year	2023/2024	Year of study	1
Type	Semestral	Semester	2
Level	2-1	ECTS credits	4.0
Code	6363-808-1201-00-23		
Workload (hours)	108	Contact hours	T - TP - PL - TC - S - E - OT - 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) José Paulo Mendes Guerra Marques Cortez

### Learning outcomes and competences

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

1. It is expected that the students acquire conceptual, ethical, scientific and technical foundations in biodiversity and natural resources conservation.

### Prerequisites

Before the course unit the learner is expected to be able to:  
Basic knowledge in biology, ecology, and forestry

### Course contents

Biodiversity and ethics Processes of biodiversity creation and destruction Conservation paradigms Principles, strategies and practices of biodiversity conservation Nature conservation in Portugal Legal instruments in conservation Conservation of forest systems Integration of conservation in forest planning and management Forest management and conservation

### Course contents (extended version)

1. 1 Introduction
  - environment, ecology, biodiversity, value of the environment and of resources;
  - natural resources and biodiversity conservation;
  - sustainability and other fundamental concepts
2. 2 Nature conservation:
  - definitions, history, participants and roles
3. 3 Biodiversity
  - definitions, levels, approaches, importance, values and functions
4. 4 Threats to biodiversity
  - mass extinction and global change;
  - habitat loss and degradation, overexploitation, exotic invasive species
5. 5 Biodiversity conservation:
  - in situ and ex situ conservation; conservation centered in populations, ecosystems and landscapes;
  - social and economic aspects of conservation
6. 6 Conservation based upon protected areas:
  - protected areas in the world in time;
  - creation of protected areas; management;
  - design: dimension, shape, spatial arrangement
  - ; evaluation: GAP analysis;
  - IUCN Protected Areas categories;
  - Protected areas in Portugal: History, categories, objectives, selection and management criteria;
  - quantitative methods for conservation area selection; management of protected areas;
  - limitations of conservation centered in protected areas
7. 7 Main national and international legal tools in conservation:
  - Berna, Washington, Ramsar, Biological Diversity Conventions;
  - Birds and Habitats Directives; Natura 2000 Network;
8. Conservation of forests
  - Approach, principles and objectives of forest conservation
  - Landscape scale conservation: connectivity; spatial pattern
  - Stand scale conservation: structural complexity - retention
  - Conservation and management of forest systems

### Recommended reading

1. Kohm, K. A. and J. F. Franklin (Eds). 1996. Creating a Forestry for the 21st Century: The Science of Ecosystem Management. Island Press, Washington, DC.
2. Groom, M. J. Meffe, G & Carroll, C. 2005. Principles of Conservation Biology, 3rd Edition Sinauer
3. Hunter, M. L. Jr. 1996. Fundamentals of Conservation Biology. Blackwell Science, Cambridge.
4. Lindenmayer, D. B. & J. F. Franklin. 2003. Towards Forest Sustainability. Island Press, Washington, DC.
5. Lindenmayer, D. B. & J. F. Franklin. 2002. Conserving forest biodiversity: a comprehensive multiscaled approach. Island Press, Washington, DC.

### Teaching and learning methods

Conventional lectures with oral presentation of subjects. Labs based upon development of practical exercises in several fields and presentation and discussion of selected papers and case studies. At the end of the semester there is a field trip to a protected area.

### Assessment methods

1. Alternative 1 - (Regular) (Final, Supplementary, Special)
  - Final Written Exam - 70%
  - Practical Work - 30%
2. Alternative 2 - (Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 100%
  - Development Topics - 0%

## Language of instruction

1. English
2. Portuguese

## Electronic validation

José Paulo Mendes Guerra Marques Cortez	Amilcar António Teiga Teixeira	Felícia Maria Silva Fonseca	Maria Sameiro Ferreira Patrício
11-02-2024	12-02-2024	12-02-2024	12-02-2024