

Course Unit	Natural Resources Conservation	Field of study	Environmental Sciences
Bachelor in	Environmental Engineering	School	School of Agriculture
Academic Year	2022/2023	Year of study	3
Type	Semestral	Semester	1
Level	1-3	ECTS credits	6.0
Code	9099-309-3101-00-22		
Workload (hours)	162	Contact hours	T 30 TP - PL 30 TC - S - E - OT 20 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) João Carlos Martins de Azevedo

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. Therefore the students should:
2. Become aware of the importance of the maintenance of diversity in populations, communities, ecosystems and landscapes,
3. The students should also be able to interpret relevant case studies as well as to evaluate them critically.
4. Finally, the students should be able to plan management practices towards conservation of species, communities, ecosystems and landscapes.

Prerequisites

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

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

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;

Recommended reading

1. Groom, M. J. Meffe, G & Carroll, C. 2005. Principles of Conservation Biology, 3rd Edition Sinauer
2. Hunter, M. L. Jr. 1996. Fundamentals of Conservation Biology. Blackwell Science, Cambridge.
3. Lindenmayer, D. B. & J. F. Franklin. 2002. Conserving forest biodiversity: a comprehensive multiscaled approach. Island Press, Washington, DC
4. Primack, R. B. 2001. Essentials of Conservation Biology. Sinauer Associates, Sunderland.

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 study cases.

Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final)
 - Practical Work - 50%
 - Final Written Exam - 50% (Minimum grade of 8 marks required in the final exam)
2. Alternative 2 - (Student Worker) (Supplementary, Special)

Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation

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05-12-2022	05-12-2022	08-12-2022	19-12-2022