

Course Unit	Applied Ecology	Field of study	-		
Master in	Environmental Education	School	School of Education		
Academic Year	2023/2024	Year of study	1	Level	2-1
Type	Semestral	Semester	2	Code	6083-766-1202-00-23
Workload (hours)	162	Contact hours	T -	TP 27	PL -
			TC 9	S -	E -
			OT 18	O 54	

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 Conceição Costa Martins, Nuno Miguel Franco Paula Santos

Learning outcomes and competences

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

1. Know the causes, consequences and characteristics of the main environmental issues that affect our planet.
2. Discuss the differences between the physical, chemical, geological and biological components of ecosystems on a global scale.
3. Identify the environmental impacts arising from industrialized and consumer society.
4. Understand the interdependence between biodiversity and water in terrestrial ecosystems.
5. Identify entities and legislation associated with environmental preservation.
6. Discuss the effects of technologies and practices in preventing and controlling environmental degradation.

Prerequisites

Before the course unit the learner is expected to be able to:
No prerequisites

Course contents

1. Ecosystem functioning; 2. Modification of ecosystems by human activity; 3. Endangered species; 4. Changes in the hydrological cycle; 5. National and global environmental protection entities; 6. Legislation concerning environment and nature conservation; 7. Prevention and control of natural resources degradation.

Course contents (extended version)

1. Ecosystem functioning
 - Influence of physical, chemical, geological and biological components on ecosystems
 - Living beings adaptation strategies
 - Main ecosystems and climatic regions of the planet and of Portugal
2. Modification of ecosystems caused by human activity
 - Evolution of human activity and exploitation of Natural Resources
 - Carrying capacity of ecosystems
 - Protected Areas
3. Endangered species
 - Transportation and Illegal wildlife trade
 - Protection and conservation of species
4. Changes in the hydrological cycle
 - Changes in the atmosphere
 - Influence of the oceans on the global hydrological cycle
 - Water as a regulator of terrestrial ecosystems
 - Environmental water management technologies
5. National and global environmental protection
 - Cooperation Organizations between States
 - Non-Governmental Organizations (NGOs)
6. Legislation on environment and nature conservation
 - International conventions and agreements
 - European Union legislation
 - National legislation
7. Prevention and control of natural resources degradation
 - Inventory and characterization of natural resources
 - Environmental monitoring - technologies and practices

Recommended reading

1. Brouwer, R. , Brander, L. , Kuik, O. , & Papyrakis, E. (2013). A synthesis of approaches to assess and value ecosystem services in the EU in the context of TEEB. Final Report. University Amsterdam.
2. Schmidt, L. (2016). Portugal: ambientes de mudança - erros, mentiras e conquistas. Lisboa: Círculo de Leitores.
3. Attenborough, D. (2020). Uma Vida no Nosso Planeta. O meu testemunho e a minha visão para o futuro. Temas e Debates – Círculo de Leitores.
4. Ricklefs, R. E. , & Miller, G. L. (2000). Ecology. (4ª Ed.) New York: Freeman.
5. UNEP (2021). Emissions gap report 2021: The heat is on – A world of climate promises not yet delivered. United Nations Environment Programme (UNEP). <https://www.unep.org/emissions-gap-report-2021>

Teaching and learning methods

Theoretical classes: content exposed by the teacher, with specific intervention from students; Theoretical-practical classes: subjects raised by the teacher, with discussion/presentation by students, using bibliographical research and seeking to develop the ability to argue; Tutorial guidance sessions: discussion of topics raised by the teacher or students, worked on in groups.

Assessment methods

1. Continuous assessment - (Regular, Student Worker) (Final)
 - Development Topics - 30% (Individual written reflection on subjects.)
 - Intermediate Written Test - 70% (Written test)
2. Examination - (Regular, Student Worker) (Supplementary, Special)
 - Final Written Exam - 100% (Written Final Exam)

Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation

Maria Conceição Costa Martins, Nuno Miguel Franco Paula Santos	Paulo Miguel Mafra Gonçalves	Sofia Marisa Alves Bergano	Carlos Manuel Costa Teixeira
22-02-2024	22-02-2024	07-03-2024	24-03-2024