

Course Unit	Ecology and Earth Sciences		Field of study	Training in Teaching Area	
Bachelor in	Basic Education		School	School of Education	
Academic Year	2022/2023	Year of study	2	Level	1-2
Type	Semestral	Semester	1	ECTS credits	4.0
Code	9853-531-2101-00-22				
Workload (hours)	108	Contact hours	T -	TP 36	PL -
			TC -	S -	E -
			OT 9	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) Paulo Miguel Mafrá Gonçalves

Learning outcomes and competences

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

1. Identify the Earth as a solar system planet in permanent change;
2. Understanding the geological diversity of our planet;
3. Explain the reaction between geodiversity and biodiversity on our planet;
4. Understand how it processes the transfer of matter and energy in ecosystems;
5. Distinguish the main biotic and abiotic characteristics found in each biome;
6. Recognize the role of man as modifier of ecosystems;
7. Show ability to collect, select and interpret relevant information, for the interpretation of situations and personal opinion on ambiental problems;
8. Apply the knowledge in the preparation and submission of shifts to educational contexts.

Prerequisites

Before the course unit the learner is expected to be able to:
Prerequisites are not required.

Course contents

1. Earth Internal structure. 2. Geodiversity. 3. The use of rocks by the Man. 4. Functioning of ecosystems. 5. Diversity of ecosystems. 6. Influence of Man in Ecosystems.

Course contents (extended version)

1. Internal structure of the Earth
 - Earthquakes and volcanoes as indicators of Earth internal structure
 - Earth composition - the various constituent layers
 - Evolution of the lithosphere
2. Geodiversity
 - Origin of rocks
 - Relations between the rocks and the various geological landscapes
 - Relationship between geodiversity and biodiversity on our planet
 - Brief references on the geology of Portugal
3. The use of rocks by Man
 - Main geological resources
 - The geology in our daily lives
4. Functioning of Ecosystems
 - Relations of interdependence among living things in an ecosystem
 - The importance of photosynthesis and respiration
 - Biotic and abiotic relationships
 - Chains and food webs
 - Transfer of matter and energy in ecosystems
5. Diversity of Ecosystems
 - Terrestrial, marine and freshwater ecosystems: a few examples
 - Major biotic and abiotic characteristics of ecosystems
 - Adaptations of living beings to the abiotic factors
6. Influence of Man in Ecosystems
 - Man as a ecosystems modifier
 - Today's environmental problems

Recommended reading

1. Meira-Carteia, P. A. (Coord.) (2012). Conhece e valoriza as alterações climáticas. Propostas para trabalhar em grupo. Gráficas Mera.
2. Velho, J. L. (2006). Os recursos minerais - uma visão geohistórica. Palimage Editores.
3. Odum, E. P. , & Barret, G. W. (2007). Fundamentos de ecologia. Editora Thomson Pioneira.
4. Gore, A. (2009). A Terra em equilíbrio - A ecologia e o espírito humano. Editora Estrela Polar.
5. Thompson, R. , & Turk, J. (2005). Earth science and the environment. Brooks/Cole.

Teaching and learning methods

Lectures: presentation of content, with involvement of students; Theoretical-practical: issues posed by the teacher, with discussion / presentation of students, using research and developing the ability to reason; Tutoric orientation sessions: discussion of issues in group; Field classes: interpretation of landscape and relationships between man and nature.

Assessment methods

1. Continuous evaluation - (Regular, Student Worker) (Final)
 - Intermediate Written Test - 70% (written test)
 - Development Topics - 30% (Practical work theme to present in the classroom and / or reports of field trips)
2. Evaluation with exam - (Regular, Student Worker) (Supplementary, Special)
 - Final Written Exam - 100% (written test)

Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation

Paulo Miguel Mafra Gonçalves	Adorinda Maria Rodrigues Pereira S. Gonçalves	Maria Cristina do Espírito Santo Martins	Carlos Manuel Costa Teixeira
28-12-2022	23-01-2023	23-01-2023	29-01-2023