

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	ECTS credits 4.0
Туре	Semestral	Semester	1	Code	9853-531-2101-00-22	
Workload (hours)	108	Contact hours	T - Lectures; TP - Lectures a	36 PL - T nd problem-solving; PL - Problem-	C - S - solving, project or laboratory; TC -	E - OT 9 O - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s)

Paulo Miguel Mafra Gonçalves

# Learning outcomes and competences

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

- It the end of the course unit the learner is expected to be able to: Identify the Earth as a solar system planet in permanent change; Understanding the geological diversity of our planet; Explain the reaction between geodiversity and biodiversity on our planet; Understand how it processes the transfer of matter and energy in ecosystems; Distinguish the main biotic and abiotic characteristics found in each biome; Recognize the role of man as modifier of ecosystems; Show ability to collect select and interrupt relevant information, for the interrupt
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- Show ability to collect, select and interpret relevant information, for the interpretation of situations and personal opinion on ambiental problems;
   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 volcances 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 Relations between the rocks and the various geological landscapes
  Relationship between geodiversity and biodiversity on our planet
  Brief references on the geology of Portugal
  The use of rocks by Man
  Main geological resources
  The geology in our daily lives
  Functioning of Ecosystems
  Relations of interdependence among living things in an ecosystem
  The importance of photosynthesis and respiration
  Biotic relationships
  Chains and food webs

- Chains and food webs Transfer of matter and energy in ecosystems
- Transfer of matter and energy in ecosystems
   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
   Influence of Man in Ecosystems
   Man as a ecosystems modifier
   Today on pricemental problems

- Today's environmental problems

## Recommended reading

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

- 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)

   Evaluation with exam (Regular, Student Worker) (Supplementary, Special)

   Final Written Exam 100% (written test)

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Language of instruction					
Portuguese, with additional English support for foreign students.					
Electronic validation					

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28-12-2022	23-01-2023	23-01-2023	29-01-2023