POLI ESCOLA SUPERIOR TECNOLOGIA GESTÃO TÉCNICO GUARDA	**SUBJECT DESCRIPTION**	**MODELO** PED.013.03

Course	**Topographic Engineering**					
Subject	**Environment and Natural Resources**					
Academic year	2023/2024	*Curricular year*	2nd	*Study period*	2nd semester	
Type of subject	Compulsory	*Student workload (H)*	Total: 70	Contact: 30	*ECTS*	2.5
Professor(s)	Prof. Carlos Alberto Figueiredo Ramos (PhD)					
☒ *Area/Group Coordinator* ☐ *Head of Department* *(select)*	Prof. Rui Pitarma Ferreira (PhD)					

PLANNED SUBJECT DESCRIPTION

1. LEARNING OBJECTIVES

To awaken the students to the importance of the sustainability of the natural resources, as a fundamental vector for the sustainable development of the human communities. Characterization of renewable and non-renewable resources. Natural resources such as water, soil, geological resources and energy resources. To realize for the importance of maintaining traditional landscapes and rational exploitation of mineral resources. Understand the environmental impacts of major industries. European and National Legislation applied to the environment and natural resources.

2. PROGRAMME

2.1 - Historical evolution of environmental concerns.
2.2 - The economy and the environment. Conventions on the environment.
2.3 - Natural resources. Renewable and non-renewable resources. The air. The water. The soil. Mineral resources and environmental impact of exploration activities. Fossil energy resources. Alternative energy resources. Renewable energy resources. Environmental impacts.
2.4 - The environment and the planning of the territory.
2.5 - Environmental legislation.

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

Through the programmatic contents and teaching methodology, this curricular unit aims to contribute to the integral formation of the student, as an individual and as a professional, sensitizing them to the need of knowing-knowing, knowing-being, and know how to do. The program contents aim to provide the basic training that allows professionals to work in the fields of sustainable development and rational exploitation of natural resources.

4. MAIN BIBLIOGRAPHY

- Teacher's notes for the Curricular Unit, 2024.
- Dias, J. E. F., Mendes, J. M. P., “Legislação ambiental sistematizada e comentada”, Coimbra Editora, 4.ª Edição, 2004.

- Dias. G. F., “Educação ambiental: princípios e práticas”, Editora Gaia, São Paulo, 2005.
- PNUMA & UNEP, Programa da Nações Unidas para o Meio ambiente, Relatórios diversos.
- Oliveira, S., “Gestão Ambiental”, Lidel, Edições Técnicas, Coimbra, 2005.
- Energias Renováveis, Fernandes, E. O., Atelier Nunes, ISBN: 978-989-96529-0-3.
- Energia Solar em Edifícios, Roriz, L., Rosendo, J., Eds. Orion, ISBN: 978-972-9620-15-8.
- Práticas de Energia Solar Térmica, Benito, T. P., Publindustria, ISBN: 9789728953393.
- Práticas de Energia Solar Fotovoltaica, Benito, T. P., Publindustria, ISBN: 9789728953423.
- Guía del instalador de Energía Eólica, Benito, T. P., Copyright, ISBN: 9788496300972.

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

The lecture is done by expository method, library research (physical and online), visit and/or follow-up of work in laboratories/energy centers (of fossil and renewable energy). The assessment is continuous, with the student to prepare and present final work (s) that essentially focuses on the subjects of the curricular unit. The student will have approval in the discipline if he obtains an evaluation equal or superior to 10 values.

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

Recognition of the environmental implications associated with the exploitation of natural resources, in particular their environmental impact, as well as the knowledge of the inherent technologies, are taught through an expository method, which also presents practical cases for analysis. It also highlights the more practical component, with the monitoring and/or visit to energy facilities. Library research (physical and online) is also used to support the elaboration of the evaluation work (s).

7. PROFESSOR CONTACT

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DATE

4 de março de 2024

SIGNATURES

Professor(s), Area/Group Coordinator or Head of Department signatures

Professor

(signature)

Area/Group Coordinator

(signature)