Course Unit	- - null			Field of study	-
	Postgradute Course in Circular and Sustainable Water Design: Health and Wellness			School	School of Hospitality and Wellbeing
Academic Year	2023/2024	Year of study	1	Level	ECTS credits 3.0
Type	Semestral	Semester	1	Code	5067-778-1103-08-23

Workload (hours)	81	Contact hours	T	TP	PL	TC	S	E	OT	O
			-	24	-	-	-	-	-	-

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 José Gonçalves Alves

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Know the properties, characteristics and composition of water
2. Master concepts relating to the study of the most relevant parameters in microbiological and chemical analysis of water
3. Evaluate and interpret the results according to the law in force
4. Understand the importance of this research in the context of thermal establishments and spas

Prerequisites

Not applicable

Course contents

Introduction to properties, characteristics, and composition of water, in particular natural mineral water, in the context of the operational activity of thermal establishments and spas.

Course contents (extended version)

1. Concept of Hydrology
2. Use and management of water
3. Properties, characteristics and composition of water
4. Water quality and legislation applied to different types of water
5. Natural waters, concept and composition
6. Water contamination
7. Microbial ecology of water
8. Importance of water monitoring
9. Physical, chemical and microbiological water analysis
10. Natural and wastewater treatment methods
11. Sampling: collect samples for chemical and microbiological analysis of water
12. Determination of microbiological parameters in different types of water
13. Determination of physical-chemical parameters in different types of water

Recommended reading

1. Baird, R. B. (Ed.) (2017). Standard Methods for the Examination of Water and Wastewater (23rd ed.). American Water Works Association.
2. Boyd, C. E. (2019). Water Quality. An Introduction (3rd ed.). Springer.
3. Ferreira, W., de Sousa, J. C. F., & Lima, N. (2010). Microbiologia. Lidel.
4. Tortora, G., Funke, B., & Case, C. (2018). Microbiology: An Introduction (13rd ed.). Pearson.

Teaching and learning methods

Application of theoretical exposure methods to the different contents, using audiovisual media complemented with interactive methods that stimulate students' participation through individual and group application of the techniques presented. In a practical way, it is intended to consolidate the acquisition of theoretical knowledge and the competencies provided by the unit.

Assessment methods

- Alternative 1 - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 100%

Language of instruction

Portuguese

Electronic validation

Maria José Gonçalves Alves	Alcina Maria Almeida Rodrigues Nunes
08-11-2023	08-11-2023