

POLI ESCOLA SUPERIOR TECNOLOGIA GESTÃO TÉCNICO GUARDA	SUBJECT DESCRIPTION	MODELO PED.013.03
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Course	Energy and Environment					
Subject	Environmental Auditing and Certification					
Academic year	2023/2024	Curricular year	3rd	Study period	2nd semester	
Type of subject	Compulsory	Student workload (H)	Total: 126	Contact: 67.5	ECTS	4.5
Professor(s)	Pedro Miguel dos Santos Melo Rodrigues					
☒ Area/Group Coordinator ☐ Head of Department	(select)	Rui António Pitarma S. Cunha Ferreira				

PLANNED SUBJECT DESCRIPTION

1. LEARNING OBJECTIVES

Provide the students with the knowledge and tools for the implementation, certification and auditing of environmental management systems, specifically through the reference standards from ISO 14000 and EMAS. Understand and apply the methods for environmental performance evaluation, environmental auditing and life cycle assessment.

2. PROGRAMME

1 Environmental management systems (EMS) and auditing

1.1 Introduction

1.2 Objectives and scope of the ISO 14001 Standard, the European EMAS System and the 19011 Standard

1.3 Objectives of Life Cycle Assessment

1.4 Importance of energy in the environmental assessment of organizations

2 Requirements of ISO Standard 14001:2016

2.1 Organization context

2.2 Leadership

2.3 Planning

2.4 Support

2.5 Operationalization

2.6 Performance evaluation

2.7 Continuous improvement

3 Requirements of the European EMAS System

3.1 Environmental Survey (Determination of the context of the organization, Determination of interested parties, Legal requirements, Identification of environmental aspects, significance of environmental aspects, determination of risks)

3.2 Environmental Management System Requirements

3.3 Internal environmental audit

3.4 Environmental communication

3.5 Information requirements for registration

4 Requirements of ISO Standard 19011: 2018

4.1 Audit principles

4.2 Management of an audit program

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4.3 Conducting an audit

4.4 Competencies and assessment of auditors

5 Simulation of the implementation of an Environmental Management System

6. Simulation of an environmental audit of an organization.

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

The knowledge and tools necessary for the implementation, certification and auditing of environmental management systems are essentially developed in points 1, 2, 3 and 4 of the syllabus. The overall integration of the syllabus is developed through simulations of the implementation of the Environmental Management System and the audits referred to in points 5 and 6.

4. MAIN BIBLIOGRAPHY

[1] NP EN ISO 14001:2015 - Sistemas de gestão ambiental. Requisitos e linhas de orientação para a sua utilização (ISO 14001:2015). Caparica: IPQ.

[2] EN ISO 14031:2013 - Environmental management - Environmental performance evaluation - Guidelines (ISO 14031:2013).

[3] NP EN ISO 14040:2008 - Gestão ambiental. Avaliação do ciclo de vida. Princípios e enquadramento (ISO 14040:2006). Caparica: IPQ.

[4] EN ISO 14050:2010 - Environmental management - Vocabulary (ISO 14050:2009).

[5] NP EN ISO 19011:2012 - Linhas de orientação para auditorias a sistemas de gestão da qualidade e/ou de gestão ambiental (ISO 19011:2011). Caparica: IPQ.

[6] Oliveira, J.F.S. (2005). Gestão Ambiental. Lisboa: Lidel – Edições Técnicas, Lda.

[7] Ferrão, Paulo (2009) Ecologia Industrial – Princípios e Ferramentas. Lisboa: ISTPress

[8] Pinto, A. (2012). Sistemas de Gestão Ambiental. Lisboa: Sílabo.

[9] Pinto, A. (2018). ISO 14001:2015 Gestão Ambiental, Guia Prático. Lisboa: Lidel

[10] Portuguese environmental legislation and standards.

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

Given the syllabus of the course and changes introduced by use the distance learning, it is necessary to implement some teaching methodologies that allow students learning and establish interaction with the teacher on the taught subjects. Thematic debate sessions (in person and at a distance) are held to promote the participation of all students. The teaching method is based on expository and narrative method. Regularly it is also used the learning method based on Case Study.

The evaluation of the curricular unit will be carried out through practical application works (50%) and an examination (50%).

The examination and the appeal examination will be on a date set by the school. The student obtains approval if the final mark, resulting from the weighting of the work and the exam is equal or greater than 10/20 values. Students who do not perform the work will have to obtain a grade equal or higher than 10/20 in the exam or in the appeal exam.

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

The practical evaluation component includes carrying out work that aims to explore and apply the global content presented in points 1, 2, 3, and 4 corresponding to the integration of content and application of simulations as described in point 5 and 6.

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7. ATTENDANCE

This course has only optional attendance, therefore, attendance at classes is optional.

8. CONTACTS AND OFFICE HOURS

Office: Laboratory (Labmia); Email: prodriques@ipg.pt; Opening hours: Monday (11:30 - 12:30); Thursday (11:30 - 12:30); Thursday (14:00 - 15:30)

DATE

29 February 2024

SIGNATURES

Professor

(signature)

Area/Group Coordinator

(signature)