

<b>POLI</b> <b>ESCOLA SUPERIOR</b> <b>TECNOLOGIA</b> <b>GESTÃO</b> <b>TÉCNICO</b> <b>GUARDA</b>	<b>SUBJECT DESCRIPTION</b>	<b>MODELO</b> PED.013.03
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Course	Energy and Environment					
Subject	Energy Management					
Academic year	2023/2024	Curricular year	3rd	Study period	2nd semester	
Type of subject	Compulsory	Student workload (H)	Total: 126	Contact: 60	ECTS	4,5
Professor(s)	Prof. Carlos Alberto Figueiredo Ramos (PhD)					
<input checked="" type="checkbox"/> Area/Group Coordinator <input type="checkbox"/> Head of Department		Prof. Rui Pitarma Ferreira (PhD)				

## PLANNED SUBJECT DESCRIPTION

### 1. LEARNING OBJECTIVES

*This course takes as its main objective to introduce students to the field of energy management, developing an enlarged view to the main topics in this area of knowledge and always with reference to the contexts in which they will conduct their activities.*

*In this context, it is intended that the student can:*

- Acquire knowledge related to the efficient management and rational use of energy, particularly in buildings (residential and services), industry, transport and street lighting;
- Recognize the importance of this topic as fundamental to achieving energy savings and environmental enhancement factor;
- Develop a critical spirit, a taste for research and the student autonomy in the analysis of energy consumption and implementation of measures / plans for energy efficiency, according to the Portuguese Legislation.

### 2. PROGRAMME

**1.** Introduction to energy management: concept, relevance and framing, according to the Portuguese Legislation. **2.** Energy balances, efficient use of energy and energy audits; **3.** Energy management in buildings (residential and services) **4.** Energy management in industry; **5.** Energy management in transportation;

### 3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

*The contents that are taught in this course are fixed according to the objectives pursued. Thus, the contents address initially the basic and general concepts relating to energy management. Subsequently, we present the specificities of the issue when contextualized in its practical application to various fields. Thus the students are provided with skills to adapt, develop and implement energy efficiency measures in the workplace, according to the Portuguese Legislation.*

### 4. MAIN BIBLIOGRAPHY

- Sá, A. F. (2016), "Application Guide Energy Management and Energy Efficiency, 2nd ed. (in portuguese)", Publindustria 2016, (ISBN: 9789897231544);
- Regulations and various normative (eg REH, RECS, SGCIE, ISO 50001 ...).

### 5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

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*Lectures (in person and at a distance), with interactive context, debate and case studies. Use of various computer resources and practices and/or laboratory demonstrations. Supervision of practical work of students.*

*Evaluation methodologies:*

*- Continuous evaluation is based on two items with different percentages: written test (60%); practical research work (40%).*

## 6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

*The expository method is used to present the fundamental contents associated with all objectives. The methodology of practical work allows the student to apply, throughout the semester and in a practical mode, the contents covered. In this way we seek to motivate students for the active learning of theoretical and practical knowledge, by conducting case studies that validate their applicability in a professional context. The methodology thus seeks to encourage students to develop a demanding work, compatible with the requirements in labor market, according to the Portuguese Legislation.*

### DATE

**04 de março de 2024**

### SIGNATURES

Area/Group Coordinator

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(signature)

Professor

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(signature)