

<i>Course</i>	Mechanical and Industrial Informatics			<i>Academic year</i>	2021/2022		
<i>Subject</i>	Industrial Maintenance			ECTS	5.5		
<i>Type of course</i>	Compulsory						
<i>Year</i>	3rd	<i>Semester</i>	1st	<i>Student Workload:</i>			
<i>Professor(s)</i>	Jorge Manuel Pereira Gregório			<i>Total</i>	148.5	<i>Contact</i>	60
<i>Area Coordinator</i>	José Reinas dos Santos André						

Planned SD

1. LEARNING OBJECTIVES

Provide students with skills to manage industry maintenance so that they can:

Recognize the general concepts of maintenance;

Link maintenance with quality;

Perform maintenance planning;

Interpret work orders and elaborate work reports;

Know the equipment and how they work;

Identify and characterize a number of procedural typologies;

Identify the principal techniques of lubrication, maintenance and calibration;

Identify diagnostic and repair techniques;

Plan maintenance using computer programs;

Define TPM (Total Productive Maintenance).

2. PROGRAMME

General concepts of maintenance in industry: concepts; applications; cost-effectiveness; types of work; diagnostic and repair techniques.

Types of maintenance: generalities; corrective; preventive; conditional and improvement maintenance.

Maintenance costs: generalities; (in)direct costs and the iceberg of cost.

Introduction to reliability, maintainability, and availability. Degree of criticality of equipment; priorities; productivity indicators (MTBF, MTTR, and availability).

Organization of the equipment park; of the technical file; of the coding and standardization; of the history of malfunctions and interventions; of intervention reports and historical record.

Planning and programming applied to maintenance (objectives, phases, tools, and techniques): technical generalities, PERT, GANTT and CPM; work orders and materials management.

Philosophies used in maintenance management: generalities; TPM (total productive maintenance); RCM (Reliability Centered Maintenance).

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

The syllabus aims to provide the students with knowledge in industrial maintenance area integrate them into the world of work. In particular, the content aims to prepare students to make them aware of the need to know how to do things both instrumentally and operationally. The syllabus will also allow the student, autonomously, to be able to productively develop their activity applying the concepts learned in the Industrial Maintenance area.

4. MAIN BIBLIOGRAPHY

Pinto, João; (1997). Organização e Gestão da Manutenção. Porto. Cenertec.

Cabral, João Paulo Saraiva; (2006). Organização e Gestão da Manutenção, dos conceitos à prática. Lisboa. Lidel.

Pinto, Carlos Varela; (2002). Organização e Gestão da Manutenção. Lisboa. Monitor.

Assis, Rui; (2004). Apoio à Decisão em Gestão da Manutenção. Fiabilidade e Manutenibilidade. Lisboa. Lidel.

Pinto, Carlos Varela; (1986). Introdução ao Planeamento da Manutenção em Empresas Industriais. Lisboa. Datinvest.

Cuignet, Renaud; (2006). Gestão da Manutenção. Lisboa. Lidel.

Farinha, J. M. Torres; (2011). Manutenção - A Terologia e as Novas Ferramentas de Gestão. Lisboa. Monitor.

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

The syllabus privileges the interconnection between theory and practice. The theoretical aspects presented through lectures, demonstrations, and questions, using the whiteboard or datashow, will be explored in practice whenever possible.

During the semester students will carry out practical group work on projects to encourage practice so that learning develops towards future professional activities with group work and student demonstrations. These assignments will always be presented as reports that will be evaluated.

Classification: Final test (50%); practical work evaluation (50%).

Final grade equal to or higher than 10 values to obtain approval, with 20 being the highest grade possible.

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

To achieve the proposed objectives, the methodology is based on principles of theoretical-practical training. The teaching methods and techniques to be applied during the sessions are interconnected amongst the lectures, questions, and demonstrations as well as group interaction, where the teacher is responsible for reinforcing learning and coordinating the various activities.

7. ATTENDANCE

N.A.

8. CONTACTS AND OFFICE HOURS

Professor: Jorge Manuel Pereira Gregório (Ph.D); jgregorio@ipg.pt; office n.º 5

Area Coordinator: José Reinas dos Santos André (Ph.D); jandre@ipg.pt; office n.º 13

Date: 30/06/2021