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

Course	**Management**					
Subject	**Quality Management**					
Academic year	2023-2024	*Curricular year*	3rd	*Study period*	1st semester	
Type of subject	Compulsory	*Student workload (H)*	Total: 140	Contact: 60	*ECTS*	5
Professor(s)	Amândio Baía					
☒ *Area/Group Coordinator* ☐ *Head of Department* *(select)*	Amândio Pereira Baía					

PLANNED SUBJECT DESCRIPTION

1. LEARNING OBJECTIVES

- It is intended that students:
  - Develop a critical sense in relation to Quality;
  - Instill the idea that quality is an essential tool for business survival;
  - Know the principles, concepts and basic criteria of quality, quality management systems and total quality;
  - Meet the requirements of the NP EN ISO;
  - Comfortable apply the techniques and concepts of control charts creating a productive environment and identify processes and continuous improvement methodologies.

2. PROGRAMME

1. Total Quality Management
   - Definition
   - Dimensions of Quality
   - How has the quality
   - Total Quality Management
   - International Standards on Quality
   - Robust Quality Products in Inspection Rules
   - Assessing the Quality of Services
   - Quality Gurus
2. Quality and Competitiveness
   - Relationship between Quality and Competitiveness
   - Factors that inhibit competitiveness
   - Comparison of international competitors
   - Policies and industrial competitiveness
   - Technology and competitiveness
   - Human Resources and competitiveness

3. How to implement Total Quality
   - Call for Quality
   - Training of staff
   - Implementation quality circles

4. Standardization in Company
   - Concept standardization

Advantages of Standardization in companies
Structure and organization of the standardization
The agents for Standardization
Actions for Standardization
Outcome Assessment
The Standards in Portugal
European Standardization - CEN, CENELEC and ETSI
International Standardization - ISO and IEC

5. Certification Companies
Advantages
Management Philosophy
Procedures
ISO standards
Strategic variable
Certification Body in Portugal (IPQ)

6. Processes
What is
Actions within a process
Process quality
Rules of a key process
Redesign Process
Variation

7. Techniques to Improve Quality
Pareto Diagram
Matrix Analysis
Grier Diagram
Time Series
Cause and Effect Diagram
Checklists
Histogram

8. Control Tables for Variable
Techniques on control charts
Objectives of the monitoring tables
State Control
Specifications
Individual values compared to mean
Central limit theorem
Control limits and specifications
Process Capability
Unlike control tables
Tables for different size subgroup
Tendency tables
Tables for the moving average and moving range
Tables for the mean and range
Tables for individual values

Tables for non-acceptance limits

9. Control Tables for Attributes
    - Attributes
    - Types of attribute tables
    - Tables control for nonconforming units
        - Objectives
        - Construction of p table for size subgroups listed
        - Construction of p tables for variable size subgroups
        - Minimize the effect of variable size subgroup
        - Table of the number of nonconformities
        - Process Capability
    - Control tables for counting nonconformities
        - Objectives
        - Construction of Table C
        - Table to count the number of nonconformities / unit
        - Quality Rating System
        - Count of nonconformities
        - Control table

10. Acceptance sampling batch Attribute
    - Fundamental aspects
    - Advantages and Disadvantages of Sampling
    - Types of Sampling Plans: single, double, multiple.
    - Lots of Training
    - Statistical aspects
        - OC curves - Simple Plans, Double and Multiple
        - Difference between OC curves of Type A and B
        - Properties of OC curves
        - Relationship between Producer and Consumer
        - Average quality health
        - Average number of samples
        - Average number inspected
        - Design of sampling plans

11. Acceptance sampling systems
    - ANSI / ASQC Z1.4 – 1993
    - Acceptable quality level

3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

This course, developed through the syllabus, aims to equip the student with knowledge in the area of quality, in order to integrate it in organizations.
In particular, the content aims to prepare students to sensitize them to the need of know-how, in instrumental and operational field.

4. MAIN BIBLIOGRAPHY

Mandatory

- Baía, A. P. (2022). *Gestão da Qualidade*. Publicações IPG.
- Baía, A. P. (2023). PowerPoints.

Recommended

- Alves, M. P. (2013). *Avaliação e qualidade das Organizações*. Escolar Editora, Lisboa.
- Besterfield, D. (2020). *Quality Control. 8th* Edition. Prentice Hall.
- Branco, R. F. (2008). *O movimento da Qualidade em Portugal*. Grupo Editorial Vida Económica, Porto, 1ª Edição.
- Brue, G. (2015). *Six Sigma For Managers*. Second Edition (Briefcase Books Series). McGraw-Hill Education.
- DeFeo, J. A. (2016). *Juran's Quality Handbook. Seventh Edition*. ASQ Editions.
- Dennis, P. (2015). *Lean Production Simplified: A Plain-Language Guide to the World's Most Powerful Production Sys*tem. 3rd Edition. CRC Press. Taylor & Francis Group.
- DeVor R. (2016). *Statistical Quality Design and Control.* Prentice Hall.
- Duke, O. (2015). *Root Cause Analysis -The Core of Problem Solving and Corrective Action*. Barnes & Noble Nook.
- Feigenbaum, A. V. (2015). *Controle da Qualidade Total*. McGrawHill, Vol., I,II,III,IV.
- Goetsch D., & Stanley, D. (2016). *Quality Management*. 8ªEdição, Prentice Hall.
- Grant, E, & Leavenworth, R. S. (2015). *Statistical Quality Control*. Mc-GrawHill.
- Grant, E. L. (2018). *Statistical Quality Control*. McGraw-Hill.
- Hamad, A. (2017). *Toward Better Understanding of Total Quality Management (TQM)*. Journal of Business & Economic Policy Vol. 3, No. 4; December 2016.
- Juran, J. M. (1988). *Juran's Quality Control Handbook*. 4th Edition McGraw-Hill, LoCo1.
- Juran, J. M., Gryna, F., & Bingham, R. (2018). *Quality Control Handbook*, Mc-GrawHill.
- Montgomery, D. C. (2019). *Introduction to Statistical Quality Control*. Sixth Edition. John Wiley & Sons, Inc.
- Pires, A. R. (2016). *Qualidade-Sistenas de Gestão de Qualidade,* 2ªEdição, Edições Silabo.
- Pyzdek, T., & Keller, P. (2014). *The Six Sigma Handbook*. McGrawHill, New York.
- Shewhart, W. A. (1999). *Economic Control of Quality of Manufactured Product*. John Wiley & Sons.
- Smith, G. (2015). *Statistical Process Control and Quality Improvement.* 5ª Edição, McGrawHill, New York.
- Soares, I., & Pinto, E. (2009). *Sistemas de Gestão de Qualidade-Guia para a sua Implementação.* Edições Sílabo.
- Summers, D. (2020). *Quality.* 4ª Edição. Prentice Hall.

Student Support

- Practical case to be made available during classes.
- Real-life problem solving.

5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

Expository teaching, case studies and practical work.

Evaluation				
	Weights			
1 Individual Test	60%			
Case Study (Team Work)	20%	Case 1	10%	Deliver to match students
		Case 2	10%	
		Case 3	10%	
		Case 4	10%	
Continuous Evaluation	The student must have at least 7 values on the test to pass (≥ 10 values) in the course unit.			
Case Studies	Only valid for continuous evaluation.			
Final Assessment	Not subject to minimum grade.			

6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

It seeks to explain the matter clearly and concisely, using the lecture method and the participation of students. Relates to organizational theory with reality, using case studies. Students are guided through readings and conducting a job in order to apply the acquired knowledge in a real context.

The lecture method is a teaching method focused on content, the oral transmission of information and knowledge. The structure, sequence and type of contents are defined by the teacher. This method is considered the most appropriate and most effective solution to achieve the training objectives defined above.

With exposure and creating the structure of a scientific article is intended to raise awareness and instill in students the importance of the process of scientific inquiry.

With the Case Study Method is proposed to solve problems that require the student to discover for yourself the possible alternative solutions. The student is the prime mover in seeking information, knowledge and other components of this methodology. The advantage of the method is to teach students to learn. The teacher becomes a mentor, facilitator, supporting students in the process of resolving cases. Students in their attempt to solve the cases, learn the material taught.

7. ATTENDANCE

Attendance 2/3 of class attendance for access frequency assessment.

8. CONTACTS AND OFFICE HOURS

Contacts		
	Instructor	Coordinator
Name	Amândio Pereira Baía	Amândio Pereira Baía
e-mail:	baia@ipg.pt	baia@ipg.pt
Phone:	965 085 752	965 085 752
Office:	41	41
Attendance Timetable		

Attendance	Tuesday:	10:30 to 12:30 hours
	Wednesday:	10:30 to 12:30 hours

9. OTHERS

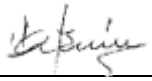
Not applicable.

DATE

1 de outubro de 2023

SIGNATURES

Professor



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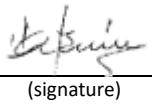
Area/Group Coordinator



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