

## Course Unit: 935015 - Quality control

Year 2 Semester 3 ISCED Code: 721 ECTS: 5,0

Type of Course Unit: Compulsory Delivery Mode: Face-to-face Language of Instruction: Portuguese

COURSE COORDINATOR: name

### HOURS OF WORK

TOTAL HOURS	Contact Hours								Hours in autonomous work
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
125		60							65

Prerequisites (if applicable): Not applicable

### LEARNING OUTCOMES (knowledge, skills and competence)

- Understand current concepts of quality and food quality control.
- Learn to use the seven basic tools of quality in food quality control.
- Apply and know how to interpret the statistical quality control of raw materials, processes and finished products.
- Learning to make decisions about accepting batches using acceptance sampling along the preparation of food.
- Understand the concepts associated with the costs of quality and learn to optimize them.

### CONTENTS

- Introduction and evolution of the concepts of Quality and Quality Control.
- The quality tools: flowchart, cause-effect diagram, Pareto diagram, histograms, check sheets
- Statistical quality control: control charts for variables and attributes.
- Acceptance sampling: setting quality standards and inspection, sampling plans for attributes and variables.
- The quality costs. Quantification, reduction and improvement.

### DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

- It is crucial to understand how the concepts of quality and quality control have evolved to better understand them today.
- The presentation and application of the basic tools of quality is fundamental to their use becomes an essential tool to analyze and solve the problems facing today in food processing.
- The use and interpretation of control charts for attributes or variables allow for timely decision making and preventive issues that may arise during the processing of foods.
- In many situations throughout the preparation of food is necessary to make decisions about acceptance or rejection of lots based on sampling. The study of various conditions of analysis and interpretation of the results of this sampling will allow to acquire the skills necessary for a correct use of this type of methodology.
- The study of the components of quality costs and factors influencing them will find the best solutions for their optimization.

### TEACHING METHODOLOGIES

- In this course unit will be taught theoretical practical lessons with presentation of specific situations or to solve practical cases.

Software will be used in the application of quality tools where appropriate

## **DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES**

In this course unit is intended that the student be prepared to use, apply, interpret and make decisions based on a set of practical tools.

The theoretical practical lessons provide a brief statement of contents immediately followed by a demonstration, practical use. They also allow the use and practical problem solving to internalization of concepts through practice and application.

In subjects where it is intended that the student is able to provide solutions independently and individual written tests will be made after each subject.

In the case of quality costs the case study should be done in a group to develop the spirit of teamwork in solving complex problems with presenting solutions for improvement.

The use of software enables demonstrate how to expedite certain phases of the application of the tools studied in particular involving more calculations and / or graphing.

## **EVALUATION METHODS**

The evaluation will consist of three practice tests to each of the contents: quality tools, statistical quality control and acceptance sampling and a working group to analyze a case study of quality costs.

## **MAIN BIBLIOGRAPHY**

GAMA, P. (2001) Ferramentas da Qualidade, Instituto Português da Qualidade. Caparica.

GANHÃO, F. (2001) Custos da Qualidade, Instituto Português da Qualidade. Caparica.

GRANT, E.L. e R.S. LEAVENWORTH (1988) Statistical Quality Control (6ª ed.), McGraw-Hill Book Company, New York.

PIRES, A. Ramos (2004) Qualidade. Sistemas de Gestão da Qualidade 3ª Edição Edições Sílabo. Lisboa.

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