

<b>Module Title:</b> Introduction to Quality Management
<b>Module Code:</b> QM0102
<b>Maximum Number of Students:</b> 30
<b>Total ECTS Credits</b> 2
<b>Notional Learning Hours</b> (a) Contact Time - 10h (b) Private Study - 40h  <b>Format of Teaching:</b> Lectures 10 h Laboratories or Practicals 0 h Other 0 h  <b>Teaching Strategy:</b> Formal lectures in 60/90 min timetable.
<b>Convener:</b> I. Cavaco
<b>University:</b> University of Algarve
<b>Language of Tuition:</b> English
<b>Module Description - The Purpose or Aims:</b>  <ol style="list-style-type: none"> <li>1. To motivate students for the importance of the implementation of Quality Systems in laboratories of analysis, considering the advantages and the costs involved.</li> <li>2. To introduce the concepts of Quality Management, Quality Assurance and Quality Control</li> <li>3. To introduce the concepts of certification and accreditation, and the ISO standards for Quality Systems</li> <li>4. To introduce general aspects of Laboratory Quality Management</li> </ol>
<b>Learning Outcomes:</b>  At the end of the module the learner is expected to be able to: <ol style="list-style-type: none"> <li>1. Recognize the elements in the structure of a Quality System and develop the general lines of a Quality System</li> <li>2. Understand and justify clearly the importance of Quality Systems in laboratories of analysis, in the context of both local and international economies</li> <li>3. Analyze in detail the costs involved in Quality System implementation in routine analytical laboratories</li> </ol>
<b>Summary of Course Content:</b>  This module aims to motivate the students for the need for Quality Systems in laboratories of analysis and to give students a general view of the existing standards for Quality Systems in laboratories and industry. Basic concepts in Quality Management, Quality Assurance and Quality Control are introduced. The family of standards ISO 9000, ISO 14000, EN ISO/IEC 17025 and GLP are introduced. The advantages and costs involved in the implementation of a QS are analyzed.

**Transferable Skills Taught:***Information Technology:*

Database search for ISO and National Standards

*Communication:*

Communication with use of Quality terminology

**Assessment Methods:**

1. LO1 – final work assignment (50%)
2. LO2, LO3 - Homework Assignments (50%)

**Assessment Criteria:**Threshold

LO1 – correctly identify and describe the elements of a Quality System

LO2 – clearly justify the importance of laboratory accreditation in economy

LO3 – correctly identify the main sources of costs in laboratory accreditation

Good

LO1 – develop a detailed quality system for a given case, applying all knowledge acquired in class

LO2 – correctly analyze an analysis report identifying major problems that may be solved by laboratory accreditation.

LO3 - critically describe the costs and advantages of implementing a quality system in a laboratory of routine analysis

Excellent

LO1 – develop a very good, detailed quality system, capable of detecting and presenting solutions to the main difficulties in a given case, and showing a deeper study than the level learned in class.

LO2 - correctly analyse an analytical report, identifying all problems and describing how such errors may be prevented in an accredited laboratory.

LO3 – propose a plan for the implementation of a Quality System in a given case, describing detailed costs and time effort needed.

**Resource Implications of Proposal and Proposed Solutions:**

Lecture notes will be available for students. These will eventually be included in the course textbooks.

Recommended reading: ISO Quality system standards: ISO 9000, ISO 9001, ISO 14000, EN ISO/ICE 17025