Laboratory Quality Systems
Unit I – Introduction to Quality Systems
Unit I Activities (Weeks 1 - 2)

Learning Objectives
Understand the underlying structure of ISO 17025 standard and its implementation in the laboratory;
Understand the process of achieving laboratory accreditation

Videos

- ☐ Course Introduction and OTSC Lab tour (Recorded in 2018) | Video for Download
- ☐ What ISO Standards can do for you? (From ISO website)
- ☐ Standard for the testing and calibration of labs under revision (From ISO website)

Presentations

- ☐ ISO 17025:2017 – Resource Requirements (24 min.) | PDF | Video for Download
- ☐ ISO 17025:2017 – Processing Requirements (31 min.) | PDF | Video for Download
- ☐ ISO 17025:2017 – Management Requirements (14 min.) | PDF| Video for Download
- ☐ Writing Standard Operating Procedures (SOPs) (10 min.) |PDF | Video for Download

You can download the videos by left-clicking on the video and select "Save Video as"

Readings

- ☐ Setting up a Quality Laboratory System (FAO) (pg. 5 -20)
- ☐ What Defines a Laboratory Quality System?
- ☐ ISO/IEC17025: 2017
- ☐ Implementation of PDCA Cycle in Calibration and Testing Laboratory Based on ISO/IEC 17025:2017 (Habibie & Kresianie 2019)
- ☐ The conception and initial years of a quality management system based on ISO/IEC 17025: an action research (de Jesus et al. 2023)
- ☐ Laboratory Accreditation 101 (July 2020) from Lab Manager
- ☐ The Elephant in the Room, or the Impact of Measurement Uncertainty on Risk (Wade and Troy 2023)
- ☐ System proposal for implementation of risk management in the context of ISO/IEC 17025 (DaSilva et al.2021)

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☐ Risk management approach for testing and calibration laboratories (Santana & Loureiro 2022)

Assignments (All assignments will be graded on a Credit/No Credit Basis – To earn credit for the course you need to complete all assignments and receive at least 70% of the points for that assignment)

☐ Self-Introduction – Due on Friday, January 31, 2025
Submit in course Google Group under Self-Introduction Thread
Access google group @ https://groups.google.com/u/1/a/lists.tamu.edu/g/lqs_2025_spring
E-mail: mailto: lqs_2025_spring@lists.tamu.edu

☐ Graded Discussion # 1 – Due by Midnight on Monday, February 3, 2025 (5 pts)
Submit in course Google Group under Graded Discussion #1 Thread;
Access google group @ https://groups.google.com/u/1/a/lists.tamu.edu/g/lqs_2025_spring
E-mail: mailto: lqs_2025_spring@lists.tamu.edu

1. What is the purpose of a quality management system in a lab?
2. How does the establishment of a quality management facilitate accreditation? Does accreditation guarantee accurate and defensible results?
3. What factors could cause incorrect results within the ISO 17025 system. Explain.

☐ **Homework # 1: Identifying Documents and Records for ISO Accreditation/ Writing SOPs**
Due by Midnight on Monday, February 10, 2025 (10 pts)
Submit via e-mail to outreach@otsc.tamu.edu

Related Documents
1. SOP Template
2. Blank Table identifying records and documents required per ISO 17025:2017
3. General SOP Guidelines

References

☐ Office of the Texas State Chemist Laboratory Quality Manual
☐ Office of the Texas State Chemist List of Standard Operating Procedures (SOPs)
☐ Office of the Texas State Chemist Examples of Analytical Methods

Writing Resources

- Scientific Writing Booklet
- Writing and Speaking Guidelines for Engineering and Science
- The Science of Scientific Writing