ISO/IEC 17025:2017 Laboratory Management and Competence Training Course



21 - 25 Dec 2026

Boston

7500 € (Per Person)

Ref: #ISO1162_117276

Course Introduction / Overview:

This comprehensive course provides a deep dive into the ISO/IEC 17025:2017 standard, the international benchmark for the competence of testing and calibration laboratories. In today's competitive global market, demonstrating technical competence and the ability to generate valid results is paramount for any laboratory seeking credibility and recognition. This training is meticulously designed to guide participants through every clause of the standard, from general and structural requirements to resource, process, and management system requirements. We will explore the core principles of risk-based thinking, impartiality, and confidentiality that underpin the standard's philosophy. Drawing on insights from leading experts in the field, such as Dr. Eur. Chem. D.L. Massart, whose work in "Practical Laboratory Quality Control" has influenced quality assurance practices, this course emphasizes practical application. BIG BEN Training Center is committed to transforming theoretical knowledge into actionable skills, ensuring that participants can confidently implement and maintain a robust quality management system. This program will equip you with the tools to navigate the accreditation process, master method validation, calculate measurement uncertainty, and drive continuous improvement within your laboratory operations, ultimately enhancing your organization's reputation and operational excellence.

Target Audience / This training course is suitable for:

- Laboratory Managers and Supervisors.
- Quality Assurance and Quality Control Managers.
- Technical Staff, Scientists, and Analysts.
- Internal Auditors and Assessors.
- Laboratory Technicians and Operators.
- Research and Development Professionals.
- Consultants in laboratory management systems.
- Accreditation Body Personnel.

Target Sectors and Industries:

- Pharmaceutical and Biotechnology Industries.
- Environmental Testing Laboratories.
- Food and Beverage Safety and Analysis.
- Chemical and Materials Testing.
- Calibration and Metrology Laboratories.
- Forensic Science and Crime Laboratories.
- Clinical and Medical Testing Facilities.
- Government Agencies and Regulatory Bodies.
- Construction and Geotechnical Testing.
- Petroleum and Petrochemical Industries.

Target Organizations Departments:

- Quality Assurance (QA) Department.
- Quality Control (QC) Department.
- Laboratory Operations.
- Research and Development (R&D).
- Regulatory Affairs and Compliance.
- Internal Audit Department.
- Technical Support Services.
- Health, Safety, and Environment (HSE).

Course Offerings:

By the end of this course, the participants will have able to:

- Interpret the requirements of ISO/IEC 17025:2017 in detail.
- Develop and implement a compliant laboratory quality management system.
- Establish procedures for ensuring impartiality and confidentiality.
- Master the principles of risk-based thinking and apply them to laboratory processes.
- Manage laboratory resources, including personnel, facilities, and equipment, effectively.
- Implement robust procedures for method validation and verification.
- Calculate and report the uncertainty of measurement for test results.
- Ensure metrological traceability of measurements.
- Conduct effective internal audits and management reviews.
- Prepare the laboratory for a successful accreditation assessment.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive and participant-centered, moving beyond traditional lecture-based formats. This course utilizes a blended learning approach that combines expert-led presentations with practical, hands-on activities to ensure a deep and lasting understanding of ISO/IEC 17025:2017. Participants will engage in detailed case studies based on real-world laboratory scenarios, allowing them to analyze challenges and develop effective solutions. Group discussions and collaborative workshops will encourage peer-to-peer learning and the sharing of diverse industry experiences. Practical exercises will focus on key areas such as developing quality manual documentation, conducting risk assessments, performing measurement uncertainty calculations, and planning internal audits. Our experienced instructors facilitate a dynamic learning environment, providing continuous feedback and personalized guidance. This immersive approach ensures that participants not only grasp the theoretical requirements of the standard but also gain the practical skills and confidence needed to implement them effectively within their own organizations, fostering a culture of quality and continuous improvement.

Course Agenda (Course Units):

Unit One: Foundations of ISO/IEC 17025:2017 and Quality Management

- Introduction to laboratory accreditation and its benefits.
- History and evolution of the ISO/IEC 17025 standard.
- Understanding the scope and structure of the 2017 version.
- Key terminology and definitions used in the standard.
- The process approach and its application in laboratories.
- Core principles: Impartiality and confidentiality.
- Relationship with other management systems like ISO 9001.

Unit Two: General and Structural Requirements

- Clause 4: General Requirements (Impartiality and Confidentiality).
- Developing policies and procedures to safeguard impartiality.
- Managing risks related to impartiality on an ongoing basis.
- Establishing legally enforceable commitments for confidentiality.
- Clause 5: Structural Requirements.
- Defining the laboratory's legal entity and management structure.
- Identifying the range of laboratory activities and responsibilities.
- Ensuring personnel are free from undue commercial or financial pressures.

Unit Three: Resource Requirements

- Clause 6: Personnel, Facilities, and Equipment.
- Defining competence requirements and training for all personnel.
- Managing environmental conditions to ensure valid results.
- Procedures for handling, transporting, and maintaining equipment.
- Equipment calibration and establishing metrological traceability.
- Clause 6: Metrological Traceability and Externally Provided Products.
- Understanding the concept of an unbroken chain of calibrations.
- Documenting and demonstrating metrological traceability.
- Procedures for selecting and evaluating external providers.

Unit Four: Process Requirements

- Clause 7: Review of Requests, Tenders, and Contracts.
- Clause 7: Selection, Verification, and Validation of Methods.
- Clause 7: Sampling and Handling of Test or Calibration Items.
- Clause 7: Technical Records and Evaluation of Measurement Uncertainty.
- Clause 7: Assuring the Validity of Results through quality control.
- Clause 7: Reporting of Results and specific reporting requirements.
- Clause 7: Complaints, Nonconforming Work, and Control of Data.

Unit Five: Management System Requirements and Accreditation

- Clause 8: Management System Options (Option A and Option B).
- Establishing and maintaining management system documentation.
- Control of management system documents and records.
- Addressing risks and opportunities for the management system.
- Implementing improvement and corrective action processes.
- Conducting effective internal audits and management reviews.
- Preparing for the accreditation process and external assessment.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can a laboratory effectively balance the structured requirements of ISO/IEC 17025:2017 with the need for flexibility and innovation in its scientific methods and operations?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by moving beyond a simple clause-by-clause review of the ISO/IEC 17025:2017 standard. Its unique value lies in a deep, implementation-focused methodology that bridges the gap between theoretical knowledge and practical application. While other courses may focus on what the standard requires, we concentrate on the 'how' providing actionable strategies, templates, and real-world case studies that empower participants to build and sustain a compliant and efficient laboratory management system. Our curriculum is built on a foundation of risk-based thinking, teaching participants not just to follow procedures but to proactively identify and mitigate risks to impartiality and technical validity. The training emphasizes the critical, and often challenging, aspects of the standard, such as the evaluation of measurement uncertainty and the validation of methods, with practical workshops designed to build hands-on competence. Furthermore, the course content is enriched with insights into the mindset of accreditation body assessors, offering an invaluable perspective that helps laboratories prepare for successful assessments. It is an immersive learning experience designed for professionals who seek not just to understand the standard, but to master its application and lead their organizations toward technical excellence.