

## *Fundamentals of Quality Control and Assurance*

### Course Objectives:

- Understand the definitions and principles of quality.
- Learn to apply essential quality control tools.
- Understand how quality assurance ensures consistency and compliance.
- Gain skills in designing and managing quality initiatives.
- Understand how to build a quality culture within an organization.
- Explore continuous improvement models and tools.
- Understand the integration of quality with innovation and digital transformation.

### Course Outline:

#### Module 1: Introduction to Quality Concepts

- Definitions of Quality, QC, and QA
- Key Quality Philosophies (Deming, Juran, Crosby).
- Cost of Quality (CoQ).
- Benefits of an effective quality system.
- Quality and customer satisfaction.

#### Module 2: Quality Control Tools and Techniques

- The 7 Basic Quality Tools (Cause-and-effect diagram, Check sheet, Control charts, Histogram, Pareto chart, Scatter diagram, Flow chart).
- Statistical Process Control (SPC) basics.
- Sampling techniques.
- Inspection and testing methods.
- Root cause analysis.

## Module 3: Quality Assurance Systems and Standards

- Quality Management Systems (QMS).
- ISO 9001:2015 structure and principles.
- Documentation and quality records.
- Internal quality audits.
- Regulatory and industry-specific standards (e.g., GMP, HACCP).

## Module 4: Implementing and Managing Quality Programs

- PDCA (Plan-Do-Check-Act) cycle.
- Quality planning and goal setting.
- Supplier quality management.
- Corrective and preventive actions (CAPA).
- Quality performance metrics and KPIs.

## Module 5: Continuous Improvement and Modern Trends in Quality

- Kaizen, Six Sigma, and Lean principles.
- Total Quality Management (TQM).
- Risk-based thinking in QA/QC.
- Digital tools and Industry 4.0 impact on quality.
- Quality in agile and project-based environments.

Location	Cairo, Dubai
Start Date	24 Aug 2025
End Date	28 Aug 2025