ASQ Introduction to Quality Engineering Training

Description

Introduction

Who should attend:

Engineers, quality control personnel, inspectors, testing personnel, or those interested in the quality engineering profession.

Objectives

- Define basic quality management principles.
- Discuss the relationship of the quality engineer to the quality system.
- Analyze the relationship of statistics to a process.
- Use process capability and statistical process control to monitor a process.
- Generate acceptance sampling plans and identify and use technical quality tools.
- Incorporate quality technology in design, customer-supplier relationships, Reliability, Availability, and Maintainability (RAM), materials control, measurement, auditing, quality costs and document control within a quality system.
- Apply problem-solving tools and basic statistical concepts, process control and process capability plans, acceptance sampling, and attribute controls.

Content

Overview of Management and Leadership Principles

- Quality Philosophies and Foundations
- The Quality Management System (QMS)
    - Strategic Planning
    - Deployment Techniques
    - Quality Information System (QIS)
- Facilitation Principles and Techniques
- Customer Relations

- Supplier Management

The Quality System

- Elements of the Quality System
- Documentation of the Quality System
- Quality Standards and Other Guidelines
- Quality Audits
- Cost of Quality (COQ)
- Quality Training

Product and Process Design

- Classification of Quality Characteristics
- Design Inputs and Review
- Reliability and Maintainability

Product and Process Control

- Tools
- Material Control
- Acceptance Sampling
- Measurement System Analysis (MSA) and Metrology

Continuous Improvement

- Quality Control Tools
- Quality Management and Planning Tools
- Continuous Improvement Techniques
- Corrective Action
- Preventive Action

Quantitative Methods and Tools

- Collecting and Summarizing Data
    - Descriptive Statistics
    - Graphical Methods for Depicting Relationships
    - Graphical Methods for Depicting Distributions
    - Continuous Distributions
    - Discrete Distributions
- Statistical Decision-Making
    - Point Estimates and Confidence Intervals
    - Hypothesis Testing and Paired-Comparison Tests
- Relationships between Variables
    - Linear Regression and Simple Linear Correlation
- Statistical Process Control (SPC)
    - Objectives and Benefits
    - Common and Special Causes
    - Selection of Variable and Rational Subgrouping

    - Control Charts
- Process and Performance Capability
    - Process Capability Studies and Indices
- Design and Analysis of Experiments
    - Terminology and ANOVA
    - Planning and Organizing Experiments