Introduction to Quality Engineering Masterclass

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Introduction:

Learn essential quality engineering concepts and tools to enhance your effectiveness as a quality engineer. Candidates will learn about quality systems, auditing, product and process control and design, quality methods and tools, applied statistics, 'SPC', and Design of Experiments (DOE). Candidates will enhance their engineering expertise and their effectiveness as quality engineers with this comprehensive introduction to key quality engineering concepts and tools critical to success in the field of quality engineering today. While this course addresses many areas of the body of knowledge for the 'Certified Quality Engineer' examination, it is not designed as an exam refresher or a preparatory course for the exam.

Who Should Attend?

Quality Managers, Quality Assurance Engineers and Officials, Project Managers, Production Managers, Production Supervisors, Product Engineers, Inspectors, Line Leaders, Production Operators, Those with responsibility for implementing quality management systems, Those with an interest in quality management systems, those starting their career in quality management, Corporate Managers, Executive Managers, Senior Managers, Middle Managers, Junior Managers, Human Resource Managers, Board of Directors, Entrepreneurs, Engineers, quality control personnel, inspectors, testing personnel, or those interested in the quality engineering profession.

Course Objectives:

By the end of this course delegates will be able to:

- Define basic leadership and quality management principles

- Discuss the relationship between the quality engineer and the quality system
- Describe product and process design
- Explain product and process control
- Apply problem solving tools and basic statistical concepts, process control and process capability plans, acceptance sampling, and attribute control
- Use various quantitative tools such as process capability and statistical process control, acceptance sampling plans and technical quality tools
- Justify the incorporation of quality technology in design, customer and supplier relationships, Reliability, Availability, and Maintainability (RAM), materials control, measurement, auditing, quality costs and document control within a quality system

Course Outline:

Overview of Management & 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 & Process Design

- Classification of quality characteristics
- Design inputs and review
- Reliability and maintainability

Product & 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 & Tools

- Collecting and summarizing data
- Statistical decision making
- Relationships between variables
- Statistical Process Control (SPC)
- Process and performance capability
- Design and analysis of experiments