

Certified Quality Engineer Exam Preparation Course Outline

Module I: Acceptance Sampling

- General Concepts
- Type I (Producer's) and Type II (Consumer's) Risk
- Operating Characteristics (OC) Curves
- Overview of Acceptance Sampling Plans

Module II: Reliability and Risk Management

- Terms and Definitions
- Reliability Life Characteristic Concepts
- Design of Systems for Reliability (Series, Parallel-Series, and Series-Parallel Systems)
- Active vs. Passive Redundancy
- Availability and Maintainability
- Failure Rates and the Bathtub Curve
- Methods to Maintain Process and Product Reliability
- Calculation of MTTF and MTBF

Module III: Quantitative Methods

- Concepts of Probability and Statistics
- Collecting and Summarizing Data
- Properties and Applications of Probability Distributions
- Statistical Decision-Making (Confidence Intervals, Hypothesis Tests, Paired-t Tests, etc.)
- Relationships Between Variables
- Designing Experiments
- Statistical Process Control (SPC)
- Analyzing Process Capability