RELIABILITY STATISTICS

OBJECTIVES

A good reliability program can drastically improve product performance and longevity, and can ultimately improve customer satisfaction. This course will go into advanced reliability statistics from sampling plans and confidence limits to hypothesis testing and design of experiments, and will give an understanding about how to apply these statistics in order to develop reliability tests and analyze reliability data.

WHO SHOULD ATTEND

This course is intended for those involved in design, test, or analysis, who want a better understanding of advanced reliability statistics for the purpose of improving the reliability of their product.

OUTLINE

Probability and Statistics
  Control Charts
  Permutations and Combinations
Probability Functions
  Probability Density Function
  Cumulative Distribution Function
  Reliability Function
  Hazard Function Continuous Distributions
Continuous Distributions
  Normal Distribution
  Exponential Distribution
  Weibull Distribution
  Lognormal Distribution
  Gamma Distribution
  Beta Distribution
Discrete Distributions
  Poisson Distribution
  Binomial Distribution
  Geometric Distribution
  Hypergeometric Distribution
Sampling Distributions
  Chi-Square Distribution
T Distribution
F Distribution
Hypothesis testing
   Chi-Square Test
   T-Test
   F-Test
Confidence intervals
   Type I (time censored)
   Type II (failure censored)
Probabilistic simulation tools
   Design of experiments
      Taguchi Method
      Analysis of Variance
Reliability Testing
   Reliability Test Plans
   Accelerated Reliability Techniques
   Step-Stress and continuously increasing stress testing
   Test, analyze, and fix tests
   Product Reliability Acceptance Testing (PRAT)
   Environmental Stress Screening (ESS)