



Quality-One International

Weibull Analysis Course Outline

- History and Purpose of Weibull Life Data Analysis
- Benefits of Weibull
 - Predictive Analysis of Failure
 - Failure and Predicted Distribution (Warranty)
 - Reduced Sample Size for Testing
- Weibull Distribution
 - Statistical Distributions that Weibull predicts
 - Probability Density Function
- How is Weibull Used
 - Reliability of a Product
 - Probability of Failure at a Specific Time
 - Warranty
 - Mean Life for a Product
 - Failure Rates
- Four-Step Process When Predicting Failure
 1. Gather life data for the product
 2. Select a lifetime distribution that will fit the data and model the life of the product
 3. Estimate the parameters that will fit the distribution to the data
 4. Generate plots and results that estimate the life characteristics
- 3 Parameter Weibull
 - Scale (η) - defines where the bulk of the distribution lies
 - Shape (β) - defines the shape of the distribution and the location parameter
 - Location (γ) - defines the location of the distribution in time
- Methodology for using normal probability paper to plot Weibull
- Using Weibull to Respond to Failure Data That Does Not Fit the Prediction (Warranty)