



## **Reliability Analysis**

(8 hours)

### **Audience and Purpose:**

This Course is designed for those individuals who need to make reliability and life estimates on core product and process components and systems. It is assumed the course participants come from a variety of backgrounds and experiences.

### **Course Objectives:**

Upon completion of the course the participants will be able to:

- Determine product reliability performance
- Select the appropriate theoretical distribution
- Make life estimates based on failure data
- Use confidence intervals in all estimates
- Add stress and other variables to reliability predictions.

**Software:** JMP, Excel

**Prerequisites:** ESDA is required

### **Course Outline:**

Introduction to reliability analysis  
Reliability and unreliability  
Distribution analysis uniform  
Distribution analysis normal  
Distribution analysis non normal  
Nonparametric reliability analysis (Kaplan-Meier)  
Parametric reliability analysis  
LogNormal  
Exponential  
Weibull  
Multivariate reliability analysis (Parametric Survival)  
Use and application of the Arrhenius transformation  
Recurrence analysis  
Chi-Square distribution use and application  
Fault Tree Analysis (FTA) method