DOE Screening Experiments Course Objectives

Unit 1 | Background for DOE

- Why design of experiments (DOE) are more efficient and effective than one-at-a-time (OAT) experimentation.
- What the major terms used in designed experiments mean.
- Types of designed experiments and when they are best used.
- How to use basic tests of significance.
- How to plan a designed experiment.

Unit 2 | Plackett-Burman Techniques

- How Plackett-Burman designs were derived.
- How to determine which Plackett-Burman matrix to use for your application.
- How to estimate the experimental error in Plackett-Burman experiments.
- How to analyze experimental results and calculate the statistical significance of factor effects.
- How to develop a prediction equation that can be used to optimize the response.
- How to salvage experiments if data are lost.

Unit 3 | Taguchi Techniques

- Why Taguchi techniques focus on the robustness of the product.
- How the Quality (Taguchi) Loss Function is used.
- How to calculate and use Signal to Noise ratios.
- How Taguchi designs were derived.
- How to determine which Taguchi design to use for your application.
- How to use Taguchi interaction tables.
- How to test the statistical significance of factor effects.
- How to develop a prediction equation that can be used to optimize the response.
- How to use mean, S/N, and variation effects to determine where to set factors.
- How to salvage experiments if data are lost.