What is "Design of Experiments?" (It is NOT the design of physics laboratory experiments!)

The idea of an "experiment" in this course is not exactly the same as it is in physics. We will start out by considering what is meant by an experiment in the engineering statistics context.

Basic Statistical Concepts

Definitions of statistical concepts, focusing on issues such as random variables and probability distributions.

Decision Making in Statistics

Statistical inference, hypothesis testing, confidence intervals, comparing samples.

Single Factor Experiments and Analysis of Variation (ANOVA)

Blocking and Block Designs

Regression Methods

Regression methods are useful for various kinds of data analysis and the basic ideas will probably be familiar to students as "curve fitting". However, we will also look at the connection to ANOVA.

Factorial Designs - Two-Level Design

and if time allows...

Fractional Factorial Designs

Response Surfaces