Topics for 2009 version of Stat 402, section A

- How many replicates do I need?
  Sample size and statistical power, plot size

- We always measure each plate twice; is that a good idea?
  Subsampling and variance components

- How else can I get a more precise estimate?
  Blocking in various forms

- What does “interaction” mean?
  Factorial treatment designs and their analysis

- What’s the “right” error?
  Split plot and other designs with multiple error terms.

- I measured the same plots every two weeks.
  Is that a problem? Repeated measures analysis

- I repeated my study at 3 sites in 2 years.
  I’ve been given two different ways to analyze the data.
  They give very different answers. Which is right?

- Can I ignore correlation between adjacent plots?
  Analysis of spatial (or temporally) correlated data.

- How can I use baseline values in my analysis?
  Analysis of covariance, change scores and other methods.

Class web site: http://www.public.iastate.edu/~pdixon/stat402