Descriptive Statistics and Basic Concepts (about 2 lectures)
  Graphical and tabular displays
  Summary statistics
  Motivation of some main ideas in statistical inference
  The role of exploratory analysis
  Population and sample

Distributional models and probability (about 5 lectures)
  Elementary probability
  Elementary properties of random variables
  The meaning of a distributional model
  Binomial distribution
  Normal distribution
  Central limit theorem
  Normal approximation to the binomial
  Sampling distributions for sample mean and sample variance

One-sample normal inference (about 6 lectures)
  The logic underlying testing
  Testing for mean and variance
  Confidence intervals for the mean and variance
  Inference for proportions
  Power and determination of sample size
  Underlying assumptions, including detection, corrective action, and robustness

Two-sample inference (about 4 lectures)
  Design aspects
  Inference for means with paired samples
  Inference for means with independent samples
  Inference for proportions
  Inference for variances
  Underlying assumptions
  Nonparametric approaches

One-way Analysis of Variance (about 4 lectures)
  Basic ideas and procedures
  Fixed effects model and interpretation
  Underlying assumptions
  Contrasts and multiple comparisons

Simple linear regression and correlation (about 4 lectures)
  Method of least squares
  Models and interpretation
  Inference and prediction for regression
  Underlying assumptions and analysis of residuals
  Correlation

Goodness-of-fit (about 2 lectures, as time permits)
  Basic ideas
  One and two-way tables

Stat/For/Hort 572 will be a continuation of 571. Primary emphasis will be placed on more advanced regression material, including multiple regression and model fitting, and on experimental design and additional topics in analysis of variance, including multi-way ANOVA, nested models, random effects, and the relationship between regression and analysis of variance. Substantial effort will be devoted to the role of assumptions in all analyses. Assignments will include analysis of data incorporating many of the complexities found in real experimental studies.