Review of hypothesis testing
Factors affecting power; effect size index (d)
Power analysis and sample size determination for independent samples t-test
Tests for variance (including $\chi^2$ and F distributions and characteristics); Levene's test
One-way ANOVA - model, expectations, significance testing; $F=t^2$ one DF case
Comparisons, contrasts, trends, and significance tests for contrasts
Orthogonality of contrasts and method of planned comparisons; pooling SSs and DFs
Family-wise Type I error rate as distinguished from test-wise Type I error rate
Simultaneous inference [Bonferroni, Fisher's LSD, Newman-Keuls, Tukey (Kramer), Dunnett, Scheffé]
Power analysis and sample size determination in the one-way ANOVA design
Two-way factorial ANOVA - model, expectations, significance testing, comparison with one-way
Plotting and interpreting interactions; tests of simple effects
Randomized block designs
Fixed, Random, and Mixed Models - models, two-way expectations, & significance tests
Conceptual introduction to multi-way between-subjects factorial designs
One-way repeated-measures ANOVA - models, expectations, & significance tests
Conceptual introduction to sphericity and epsilon-adjustment
Mixed between/within designs
Analysis of covariance and homogeneity of regression tests and interpretations
Adjusted sums of squares and adjusted means
ANCOVA compared with one-way ANOVA, blocking designs, gain-score analysis
Conceptual introduction to nested designs