LECTURE OUTLINE
Lectures 1-3 use textbook Chapters 1-4.
Lecture 1: Sampling, populations, histograms, sample means and medians
Lecture 2: Quantiles, boxplots, percentiles, variability, basic probability, empirical rule, bell-shaped curves
Lecture 3: Computing normal probabilities, the q-q plot, standard error of the mean, basic inference.
Lectures 4-9 use textbook Chapters 5, 6 and 7.
Lecture 4: Confidence intervals for the mean when the population standard deviation is known, properties of confidence intervals.
Lecture 5: Hypothesis testing, statistical power, p-values, never accepting a null hypothesis
Lecture 6: Sample size calculations, paired comparisons, student’s t, confidence intervals
Lecture 7: Wilcoxon signed ranks test, comparing two population means
Lecture 8: T-tests and comparing two population means
Lecture 9: Wilcoxon rank sum tests for comparing two populations, testing for equal variances, effects of outliers.
Lectures 10-14 use textbook Chapters 8, 9.
Lecture 10: ANOVA
Lecture 11. More ANOVA and Review

Lecture 12. Exam #1
Lecture 13: Multiple comparisons
Lecture 14: Kruskal Wallis tests, tests for normality, more ANOVA
Lectures 15-17 use Chapter 10.
Lecture 15: Inference about a proportion, Comparing population proportions
Lecture 16: More on Comparing population proportions
Lecture 17: Chisquared test for independence
Lectures 18-24 use textbook Chapters 11, 12.
Lecture 18: Simple linear regression
Lecture 19: Review

Lecture 20. Exam #2
Lecture 21: Inference about slope, residual plots, R-square
Lecture 22: Outliers, Leverage, Correlation
Lecture 23: Correlation, confidence intervals for a regression line
Lecture 24: Heteroscedasticity, Confidence intervals for an actual response
Lecture 25: Comparing population lines - ANCOVA with equal slopes
Lecture 26: Quadratic curve and Comparing population lines - unequal slopes ANCOVA
Lecture 27: Comparing population lines - ANCOVA with unequal slopes
Lecture 28: Review

Final Exam

*** Additional Material may be added at the discretion of the instructor.