Schedule, Readings, and Assignments Draft, August 17, 2020 Consult online version on Sakai for latest version	
Sep. 1	**Descriptive Statistics** *Topics* • Types of Data, Levels of Measurement • Frequency Distributions and Histograms • Measures of Central Tendency • Measures of Variability, Skewness, etc. • Correlation between variables *Readings* • Jargowsky and Yang, "Descriptive and Inferential Statistics," Encyclopedia of Social Measurement, pp 659-664 (first column). • Joel Best, "Telling the Truth about Damned Lies and Statistics," The Chronical of Higher Education, May 4, 2001. • Introductory Statistics, Chapter 1 and Chapter 2 *Video* • Introduction to Stata Interface
Sep. 8	***No class -- Rutgers-Camden on Monday Schedule***
Sep. 15	**Effective Presentation of Data** *Topics* • Identifying the informative contrast • Effective communication with tables and graphs *Readings* • Gene Zelazny, Say it with Charts, Introduction • Gene Zelazny, Say it with Charts, Section 1: Choosing Charts • Tufte, The Decision to Launch the Space Shuttle Challenger • Tufte, "The Cognitive Style of Powerpoint" *Video* • (optional) The Challenger Disaster *Assignments Due* • Problem Set #1

Sep. 22	**Basics of Probability** *Topics* • Simple and Compound Events • Rules of Probability • Bayes' Theorem • Random Variables • Expected Value and Variance of Random Variables *Readings* • Introductory Statistics, Chapter 3 • Gina Kolata, "Mammogram Talks Prove Indefinite," The New York Times • (optional, more advanced) Stock and Watson, Chapter 2: Review of Probability, pp. 14-35.
Sep. 29	**Probability Distributions** *Topics* • Discrete probability distributions • Continuous probability functions *Readings* • Introductory Statistics, Chapter 4 and Chapter 5 *Assignments Due* • Problem Set #2
Oct. 6	**Sampling Theory and Statistical Inference** *Topics* • Basic principles of sampling • Sampling error vs. bias • The Central Limit Theorem • Confidence intervals for means and proportions *Readings* • Jargowsky and Yang, Descriptive and Inferential Statistics, pp 644-end. • Lienesch et al., "How Much Can we Trust the Polls?" Huffington Post, Oct. 3, 2014. • Introductory Statistics, Chapter 6 and Chapter 7

Oct. 13	**Introduction to Hypothesis Testing** *Topics significance* • Confidence intervals for means and proportions • Introduction to hypothesis testing *Readings* • Introductory Statistics, Chapter 8 • Dan Myers, "Along Polluted Rio Grande, Rise in Birth Defects Brings Fear," The Boston Globe, September 7, 1993, p. 3. *Assignments Due* • Problem Set #3
Oct. 20	**Hypothesis Testing II: Small Samples and Differences between Samples** *Topics* • Student's t distribution • Hypothesis tests for small samples • Hypothesis tests for differences between samples *Readings* • Introductory Statistics, Chapter 9 • "Deprogramming Heaven's Gate," The New Yorker, April 14, 1997, pp. 31. *Assignments Due* • Problem Set #4
Oct. 27	**Test #1** **Open Note, Open Book** **Available at 6pm, Due at 9pm**
Nov. 3	**Hypothesis Testing III: Statistical Power, Chi-Squared Tests** *Topics* • The power of the test • Tests of Goodness of Fit • Tests of Association between Categorical Variables *Readings* • Introductory Statistics, Sections 11.1 and 11.2 • Friedman, E. "Pet Ownership and Coronary Heart Disease Survival." Circulation, Vol. 168, pp. 57-58 (1978). *Video* • Stata, Conceptual Intro to Power (YouTube) • Stata, Tour of Power Calculations (YouTube)

Nov. 10	**Hypothesis Testing VI: Tests of Variances** *Topics* • Sampling distributions for a variance • Hypothesis tests regarding a variance • Comparing 2 variances • ANOVA *Readings* • Mendanhall, Beaver and Beaver, Sections 10.6-10.8 • Introductory Statistics, Sections 11.3 and 11.4 • Aberson, Chris (2002). "Interpreting null results: Improving presentation and conclusions with confidence intervals." Journal of Articles in Support of the Null Hypothesis, 1, 36-42. *Video* • Stata YouTube video tutorial on One-Way ANOVA • Stata YouTube video tutorial on Two-Way ANOVA *Assignments Due* • Problem Set #5
Nov. 17	**Hypothesis Testing V: When the Sampling Distribution is Unknown** *Topics* • Bootstrapping • Non-parametric tests *Readings* • Karl Wuensh, "Nonparametric Statistics." • Fruend, Mathematical Statistics, Sections 16.1-16.4. • Robert Stine. 1989. "An Introduction to Bootstrap Methods," Sociological Methods and *Research*, pp. 243-250. Note: you only need to read the first 8 pages! *Assignments Due* • Problem Set #6
Nov. 24	**Bivariate Regression** *Topics* • The population regression function • The sample regression function • Obtaining the estimates • Testing the hypothesis that X affects Y *Readings* • Tufte, Chap. 3, pp. 65-91. • (optional) Tufte, Chap 3, pp. 91-end

Dec. 1	**Multiple Regression** *Topics* • Isolating the Effect of X on Y • Left Out Variable Bias • The true meaning of multiple regression • Hypothesis testing • Goodness of Fit *Readings* • Tufte, Chapter 4. • Devaney, Barbara, Linda Bileimer, and Jennifer Schore. 1992. "Medicaid Costs and Birth Outcomes: The Effect of Prenatal WIC Participation and the Use of Prenatal Care." *Journal of Policy Analysis and Management* 11: 573-92. *Assignments Due* • Problem Set 7 Due
Dec. 8	***Test #2*** ***Open Note, Open Book*** ***Available at 6pm, Due at 9pm***