PSC 200: Applied Data Analysis

Fall 2006
Lecture: 11:05-12:20, Tuesday and Thursday, Bausch and Lomb 109
Labs / Recitation: 11:00-11:50 and 1:00-1:50, Gavett 244
Course website: http://mail.rochester.edu/~mperess/ada2006.html

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Overview: This course offers an introduction to empirical research methods in political science. By the end of the semester, students should have a better acquaintance with the type of empirical work done by most political scientists (and other social scientists) and the ability to understand and critique it.

Textbook: The textbook for the course is Agresti and Finlay, "Statistical Methods for the Social Sciences".

Readings: Later in the semester, readings will be occasionally assigned. I will mention assigned readings in class and post the assignments on the course website. We will discuss these in class and some may appear on the homework assignments and exams.

Software: We will be using SPSS in this class. You may use SPSS in the computer lab, or purchase a student copy for ~$40.

Recitations: The teaching assistants will hold weekly recitations in computer labs to reinforce concepts from the class, assist with software questions, review homework, and provide general guidance.

Homeworks: Six homework assignments will be required. You will have at least a week to complete each assignment. Most of these homework assignments will require you to use SPSS. Homeworks must be handed to me in class or the TAs in recitation (depending on the due date).

Grading: Grades will be based on two in-class exams and six homework assignments. Each exam and the homework's assignments will count for one-third of your grade. The second exam will not be cumulative.

Syllabus: This syllabus may be altered during the semester to accommodate the learning pace of the class. It is the students' responsibility to keep abreast of assignments and due dates by attending class and monitoring the class website. Homework assignments, lecture notes, reading material, etc., will be posted online.

I – Descriptive Statistics (about 2 lectures)

    I.1 – Introduction and Overview (1.1-1.4)
    I.2 – Descriptive Statistics (2.1-2.5,3.1-3.6)

II – Probability (about 4 lectures)

    II.1 – Discrete Probability Distributions (4.1)
    II.2 – Continuous Random Variables (4.2)
    II.3 – Independence and Measures of Association

III – Statistics (about 8 lectures)

    III.1 – Intro to Statistics (5.1)
    III.2 – Sampling Distributions (4.3-4.6)
    III.3 – Inference for Means (5.2, 6.1-6.2, 6.5)
    III.4 – Inference for Proportions (5.3, 6.3, 6.6)
    III.5 – Sample Size Determination and Power (5.4, 6.4, 6.7)
    III.7 – Inference for Differences in Means (7.1, 7.3, 7.4)
    III.6 – Inference for Differences in Proportions (7.2)
    III.7 – Surveys

IV – Regression (about 12 lectures)

    IV.1 – Correlation and Bivariate Regression (9.1-9.4)
    IV.2 – Multivariate Regression: Estimation (11.1–11.3)
    IV.3 – Multivariate Regression: Hypothesis Testing (9.5, 11.4)
    IV.4 – Indicator Variables and Analysis of Variance (12.1-12.3)
    IV.5 – Functional Form and Interactions (11.5, 12.4-12.5)
    IV.6 – Model Building, Diagnostics, and Corrective Measures (14.2-14.4)
    IV.7 – Discrete Dependent Variables (15.1-15.3)