PSC 200

Applied Data Analysis

Professor:
Kevin A. Clarke
Harkness 317
Office Hours: Wed, 3:00-4:00
kevin.clarke@rochester.edu

Teaching Assistants:
Anna Walsdorff (Hark 302)
anna.walsdorff@rochester.edu
Mary Clare Roche (Hark 305)
maryclare.roche@rochester.edu

PURPOSE

This course introduces students to data analysis, statistical inference, and research design relevant to political science research. Topics include variable measurement, descriptive statistics, confidence intervals, hypothesis tests, correlation, and regression analysis.

PREREQUISITES

Working knowledge of high school algebra is the only course prerequisite. Note that this course fulfills the Political Science department's techniques of analysis requirement.

COURSE REQUIREMENTS

Evaluation is based on problem sets (25% of your grade) and three midterm exams (25% of your grade each). The exams are given as scheduled and are not given early — make any travel plans accordingly. You must take all three exams to pass the course.

The lowest homework grade will be dropped when calculating the final course grade to allow for illness or other such unforeseen events. That said, you are strongly encouraged to complete ALL homework assignments. Students must deliver their homework in hardcopy to the TA. Late assignments will be penalized one half-grade (e.g., B to B-) for each day they are late. Homeworks more than seven days late will receive a grade of zero. Finally, while you are encouraged to study together and to learn the software together, all assignments are to be completed individually.

A web page for this course is to be found here:

`http://www.rochester.edu/College/PSC/clarke/200/200.html`

ACADEMIC INTEGRITY

Be familiar with the University's policies on academic integrity and disciplinary action (`http://www.rochester.edu/College/CCAS/AdviserHandbook/AcadHonesty.html`). Violators of University regulations on academic integrity will be dealt with severely, which means that your grade will suffer, and I will forward your case to the Chair of the College Board on Academic Honesty.

Remember that the same technology that has made plagiarism easier to accomplish has also made it easier to detect. If you do not cite a source, it is plagiarism. If you do cite it, it is scholarship.

TEXT

Agresti, Alan and Barbara Finlay (2009). *Statistical Methods for the Social Sciences*, 4th ed. Pearson.

COMPUTING

Students will learn the R program for statistical analysis. A computing lab will be held on Fridays from 2:00 PM — 3:15 PM in either Goergen 102 or Harkness 114.

COURSE SCHEDULE

August 31: Introduction

- None (first day of class)

September 2: No class

- None

September 7-9: Probability, Sampling, and Measurement

- Agresti & Finlay, chapter 2

September 14-16: Descriptive Statistics

- Agresti & Finlay, chapter 3

September 21-23: Probability Distributions

- Agresti & Finlay, chapter 4

September 28: Exam 1 — no exceptions

- None

September 30-October 7: Estimation

- Agresti & Finlay, chapter 5

October 12-14: Significance Tests

- Agresti & Finlay, chapter 6

October 19-21: Comparison of Two Groups

- Agresti & Finlay, chapter 7

October 26: Review

- None

October 28: Exam 2 — no exceptions.

- None

November 2-4: χ^2-Tests

- Agresti & Finlay, chapter 8

November 9-11: Regression and Correlation

- Agresti & Finlay, chapter 9

<u>November 16-23: Multivariate Relationships</u>

- Agresti & Finlay, chapter 10

<u>November 25: Thanksgiving break</u>

- None

<u>November 30-December 2: Multiple Regression</u>

- Agresti & Finlay, chapter 11

<u>Demeber 7: Review</u>

- None

<u>December 9: Exam 3 — no exceptions.</u>

- None