PSC 200: Data Analysis I

Room: Gavet 202
Days and Time: MW, 11:50-13:05

Instructor: Prof. Sergio Montero
Office: M, 2:00-4:00, Harkness Hall 320
Email: smontero@rochester.edu

Teaching Assistant: Yannis Vassiliadis
Office: W, 1:30-2:30, Harkness Hall 338
Email: i.vassiliadis@rochester.edu

Course Description: Data analysis has become a key part of many fields including politics, business, law, and public policy. This course covers the fundamentals of data analysis, giving students the necessary statistical skills to understand and critically analyze contemporary political, legal, and policy puzzles. Lectures will focus on the theory and practice of quantitative analysis, and weekly lab sessions will guide students through the particulars of statistical software.

Prerequisites: No prior knowledge of statistics or data analysis is required. Working knowledge of high-school algebra is the only course prerequisite. Without special permission of the instructor, students may not enroll in this course if they have earned credit and a letter grade for ECO 230, PSC 205, PSY/CSP 211, STT 211, STT 212, STT 213, STT 214, or any other course in statistics, or if they have received a score of 4 or 5 on the Advanced Placement exam in Statistics.

Grading: Evaluation is based on problem sets (40%), a midterm (20%), a final (30%), and class participation (10%).

The lowest homework grade will be dropped when calculating the final course grade to allow for illness or other unforeseen events. Late assignments will be penalized one half-grade (e.g., B to B-) for each day they are late. Homeworks more than 7 days late will not be accepted.

Collaboration Policy: While collaboration on problem sets is encouraged, all assignments must be completed individually.

Academic Honesty: Please be familiar with the University's policies on academic integrity and disciplinary action (http://www.rochester.edu/college/honesty/).

Text: Diez, David M., Christopher D. Barr, and Mine Çetinkaya-Rundel (2015), *OpenIntro Statistics*, 3rd ed (free download: https://www.openintro.org/stat/index.php).

Computing: Students will learn to code in R. Computing labs will be held on F, 2:00-3:15, in Harkness 114.

Course Schedule:

August 30, September 4: No class

September 6: Course overview

September 11,13,18: Introduction to data (chapter 1)

September 20,25,27: Probability (chapter 2)

October 2,4: Distributions of random variables (chapter 3)

October 9: No class (fall term break)

October 11: Midterm

October 16,18,23: Foundations for inference (chapter 4)

October 25,30, November 1: Inference for numerical data (chapter 5)

November 6,8,13: Inference for categorical data (chapter 6)

November 15,20,27: Introduction to linear regression (chapter 7)

November 22: No class (Thanksgiving break)

November 29, December 4,6: Multiple and logistic regression (chapter 8)

Final exam date: TBD