PSC 200: Data Analysis I

Room: Hylan 202
Days and Time: MW, 14:00-15:15

Instructor: Prof. Sergio Montero
    Office: T, 16:00-17:00, Harkness Hall 320
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Teaching Assistant: TBD

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 (30%), three in-class exams (20% each), 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 10/100 points 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, 14:00-15:15, in Harkness 114.

Course Schedule:

August 29, September 3: No class

September 5: Course overview

September 10,12,17: Introduction to data (chapter 1)

September 19,24,26: Probability (chapter 2)

October 1,3,8: Distributions of random variables (chapter 3)

October 15: No class (fall term break)

October 17: First exam

October 22,24,29: Foundations for inference (chapter 4)

October 31, November 5: Inference for numerical data (chapter 5)

November 7: Inference for categorical data (chapter 6)

November 12: Second exam

November 14,19,26: Introduction to linear regression (chapter 7)

November 21: No class (Thanksgiving break)

November 28, December 3,5: Multiple and logistic regression (chapter 8)

December 12:: Third exam