STAT 22400 (PBHS 32400) Applied Regression Analysis
Autumn 2022

Course Staff

- Instructor: Yandi Shen (`ydshen@uchicago.edu`), Office: Jones Laboratory 316

- Teaching assistant: Vasileios Katsianos (`kbill@statistics.uchicago.edu`)
  Zhan Lin (`zhanlin@galton.uchicago.edu`)

Time and Place MWF 11:30–12:20pm, Eckhart 133

Office Hours Zoom sessions accessed via the 'Zoom' module on canvas.

- Yandi's office hour: Fri 4-5 pm, Jones Laboratory 316, also via zoom

- TA's office hour: Vasileios Katsianos (Tue 4-5 pm), Zhan Lin (Mon 5-6 pm)

Course Website https://canvas.uchicago.edu/courses/44974. All course materials will be posted there.

Textbfook Chatterjee & Hadi. *Regression Analysis by Example*, 5th edition 2005, Wiley. Author's website (including data sets): http://www1.aucegypt.edu/faculty/hadi/RABE5/

Course Description STAT 22400/PBHS32400 introduces the methods and applications of fitting and interpreting multiple regression models. The primary emphasis is on the method of least squares and its many varieties. Topics include the examination of residuals, the transformation of data, strategies, and criteria for the selection of a regression equation, the use of dummy variables, tests of fit, nonlinear models, multi-collinearity, biases due to excluded variables and measurement error, and the use and interpretation of computer package regression programs. The techniques discussed are illustrated by many real examples involving data from both the natural and social sciences. Matrix notation is introduced as needed.

Prerequisites STAT 22000 or 23400 with a grade of at least C+, or STAT 22200 or 22600 or 24500 or 24510 or PBHS 32100, or AP Statistics credit for STAT 22000. Also two-quarters of calculus (MATH 13200 or 15200 or 15300 or 16200 or 16210 or 15910 or 18300 or 19520 or 19620 or 20250 or 20300 or 20310).

Grade Components

- Homework (30%). All homeworks are to be submitted and graded on Gradescope.

  - One assignment per week, 7 in total.
  - The lowest TWO HW scores will be dropped.
  - No late HW will be accepted or graded.

- Quiz (5%): one quiz will be held in the middle of the quarter. The exact time is TBD, but will be announced one week in advance.

- Exams (65%): Midterm (32.5%) will be held in the beginning of November, Final Exam (32.5%) will be held in the exam week. Both exams will be in-class.