ECONOMETRIC DATA SCIENCE: COURSE OUTLINE

Part I

Welcome to 14.32: Let’s Experiment!

A. Statistical Tools

1. Describing Distributions: Expectation and Moments
2. Sampling Distributions and Inference
3. Confidence Intervals
4. Statistical Inference in Asymptopia

B. Analysis and Interpretation of Randomized Trials

5. Causality and Potential Outcomes

C. Regression Basics

6. Regression is a Many-Splendored Thing
7. Introduction to Multivariate Regression
8. Multivariate Regression (cont.) – Omitted Variables, Short vs. Long
9. Sampling Distribution of Regression Estimates
10. Residuals, Fitted Values, and Goodness of Fit

Part II

D. Using Multivariate Regression

11. Modeling with Multivariate Regression Models
12. Standard Standard Error Issues

F. Omitted Variables Solutions

13. Instrumental Variables and 2SLS for Omitted-Variable Problems
14. Panel Data, Fixed Effects, and IV for Measurement Error
15. Doing Differences-in-differences

H. More ‘Metrics Magic (time-permitting)

16. Regression Discontinuity Designs
17. Simultaneous Equations Models