Econ 613-01  Applied Econometrics in Microeconomics
Spring 2013  10:05 – 11:20 AM, MW
Instructor: Daniel Yi Xu  126 Soc Psy Bldg.

This course is designed to provide applied econometric techniques, commonly used in Development, Industrial Organization, Labor, and Public Economics, to Master students in Economics, Public Policy, and Business. Students are expected to have taken at least one or more econometrics/statistics courses at the level of Econ 608D (Introduction to Econometrics).

The main aim of this course is not only to cover basic topics in cross section and panel data econometrics, but also to familiarize students with applications of these econometric techniques to real-world economic questions. The course instruction is divided between theoretical development in textbook and case studies which are taken from academic publications.

The students will have hands-on experience using STATA (or MATLAB) to solve 5-6 empirical problem sets.

Course Textbook

Econometric Analysis of Cross Section and Panel Data, Jeffrey Wooldridge, MIT Press

Teaching Assistant and Office Hour

Wenjing Wang (ww24@duke.edu) is the teaching assistant for this course. She is available to help you with course material and empirical problem sets. Wenjing will meet with students at the end of first lecture to discuss a day and time for office hours.

I will also hold additional office hour each week, tentatively at 11:20AM – 12:30PM Wed.

Grading

Your course grade will depend on your performance on problem sets, mid-term exam, and a final take-home exam in the following way:

Midterm Exam:  30%
Final Exam:  40%
Problem Sets:  30%

There will be no makeup exams. If you miss the midterm, the weight of the missed exam will be placed on the final.
Preliminary Course Outline (We will update as course proceeds)

1/9: OLS Estimation of Single-Equation Linear Models (Chapter 4)

1/14: Instrumental Variables Estimation of Single-Equation Linear Models (Chapter 5)
   Application: Return to Schooling

1/16: Simultaneous Equations Models (Chapter 9)
   Application: Demand Estimation I

1/21: System Estimation by Instrumental Variables (Chapter 8)
   Application: Demand Estimation II

Problem Set 1

1/23: Basic Linear Panel Data Model I (Chapter 10)

1/28: Basic Linear Panel Data Model II (Chapter 10)
   Application: Production Function I

Problem Set 2

1/30: M-Estimation and Numerical Optimization (Chapter 12)

2/4: More on Numerical Optimization
   Application: MATLAB illustrations

2/6: Brief Review of Maximum Likelihood Methods (Chapter 13)

2/11: Discrete Response Model I (Chapter 15)
   Application: Smoking

2/13: Discrete Response Model II (Chapter 15)
   Application: Energy Consumption Choices

2/18: Discrete Response Model III (Chapter 15)
   Application: Market Entry

Problem Set 3

2/20: Count Data I (Chapter 19)
Application: Child Mortality

2/25: Count Data II (Chapter 19)

Application: Patents

2/27: Brief Review of Generalized Method of Moments (Chapter 14)

3/4: Midterm Review

3/6: Midterm Exam

3/18: Dynamic Panel Data Revisited

Application: Production Function II

3/20: Sample Selection (Chapter 17)

Application: Wage offer and labor participation

Problem Set 4

3/25: No Class

3/27: Sample Selection (Chapter 17)

4/1: Randomization and Average Treatment Effects (Chapter 18)

Application: Return to Capital

4/3: Propensity Score Matching (Chapter 18)

Application: Labor Training Program

4/8: Selection on Unobservable and LATE (Chapter 18)

Application: Million Dollar Plants

Problem Set 5

4/10: Regression Discontinuity Design I

4/15: Regression Discontinuity Design II

Application: Enterprise Zone

4/17: Final Review

Problem Set 6