Econ 690-01  Microeconometrics  Spring 2018

Tuesdays and Thursday, 11:45 – 13:00, Languages Building 207.

Instructor: Adam Rosen (adam.rosen@duke.edu).

Synopsis

This course studies how data on individual economic agents can be used to draw inferences on their behavior. We will cover general econometric methods that economists use for empirical microeconomic research. This will include the study of econometric models with limited dependent variables, non-linear models, models of selection and censoring, and methods for panel data. While the focus will primarily be on parametric models, there will also be some discussion of semi-parametric models.

Key concepts will include an introduction to identification, as well as widely applicable estimation methods such as maximum likelihood estimation (MLE) and generalized method of moments (GMM). While we will focus on their application in the context of several particular models commonly used in empirical research, we will cover them at a sufficiently high level of generality to enable their application to structural econometric models more broadly. A firm understanding of these tools is excellent preparation for applied work in economics in the private sector, for government policy work, or for future research in econometrics, such as in a PhD program.

Along the way we will discuss application of some of these models to economic data in contemporary empirical research, but our focus will be primarily methodological in order to establish a firm understanding of commonly used microeconometric models, and the statistical properties of their associated estimators.

Prerequisites

There is no formal prerequisite, but students are expected to have sufficient background to be familiar with material covered in Economics 608D. If you have not taken 608D and are not sure if you have the right background, please come see me.

Course Textbook


Office Hour

I will hold office hours each week on Tuesday from 4:00pm – 5:00pm in Social Sciences 221B.

Teaching Assistant

Erica Liu (meixiazi.liu@duke.edu) is the teaching assistant for this course. She will hold weekly office hours to provide additional support with regard to course material and problem sets at a time yet to be determined.
Grading

Your course grade will be determined by your performance on problem sets, a mid-term exam, and a final exam, as follows:

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

There will be no makeup exams.

Preliminary Course Plan (subject to updates as the semester proceeds)


Tuesday January 30: Multinomial and Ordered Response Models. Chapters 16.1 – 16.2.2 & 16.3.1 – 16.3.2. Problem Set 1 due.

Thursday February 1: Censored regression. Type I Tobit Model. Chapters 17.1 – 17.4


Thursday February 8: Discrete Response Models with Endogenous Regressors. Chapters 15.7.2 – 15.7.3, 16.2.3 & 16.3.3.

Tuesday February 13: Incidental Truncation: Probit Selection Models. Chapter 17.6


Tuesday February 20: Quantile Regression. Chapter 12.10.1 – 12.10.2.
**Thursday February 22:** Quantile Regression, continued.
[http://www.cemmap.ac.uk/resource/id/koenker/koenker_mc_handout.pdf](http://www.cemmap.ac.uk/resource/id/koenker/koenker_mc_handout.pdf)

**Tuesday February 27:** Generalized Method of Moments.
Chapter 14.1 – 14.3. See also chapters 8.1 – 8.3.

**Thursday March 1:** Generalized Method of Moments, continued.
Chapter 14.1 – 14.3. See also chapters 8.1 – 8.3.

**Problem Set 3 due.**

**Tuesday March 6:** Midterm Review.

**Thursday March 8:** **Midterm Exam.**

**Tuesday March 13:** No class, spring recess.

**Thursday March 15:** No class, spring recess.

**Tuesday March 20:** Seemingly Unrelated Regressions.
Chapters 7.1 – 7.7

**Thursday March 22:** Simultaneous Equations Models.
Chapter 9.1 – 9.3.

**Tuesday March 27:** Simultaneous Equations Models, continued.
Chapter 9.4 – 9.6.

**Thursday March 29:** Linear Panel Data Models.
Chapters 10.1 – 10.4

**Problem Set 4 due.**

**Tuesday April 3:** Linear Panel Data Models, continued.
Chapters 10.5 – 10.8.

**Thursday April 5:** GMM and IV for Linear Panel Data Models.
Chapter 11.1 – 11.3.

**Tuesday April 10:** First Differencing IV and Measurement Error with Panel Data.
Chapter 11.4 – 11.5.

**Thursday April 12:** Dynamic Panel Data Models.
Chapter 11.6 – 11.7.

**Problem Set 5 due.**

**Tuesday April 17:** Review.

**The final exam will be held during the exam period April 30 – May 5.**