Microeconometrics AS.180.637 (Part A)

Fall 2025

Professor: Lixiong Li
Email: lixiong.li@jhu.edu
Office Hours: Monday 2:45 PM – 4:00 PM or by appointment

Course Description

This course is designed for second year graduate students who have taken two econometrics class 180.636 and 180.633. It covers some selected topics in microeconometrics. The goal is to provide students a knowledge background and tools for research in both theoretical and applied microeconometrics. Topics planned to be covered in this class are listed in the following:

Topic 1: Theory and Applications of Extremum Estimator

- consistency
- asymptotic normality
- quantile regression (optional)
- two-step estimator

Topic 2: Nonparametric Estimation

- kernel estimation
- local polynomial estimation
- machine learning methods / Double Debiased Machine Learning

Topic 3: Partial Identification (if time permits)

- random set
- moment inequality models
- outer set
- optimal transport

Homework and Evaluation

I will assign a problem set at the end of Topic 2, which combines theory and programming exercises. It will be due two weeks after being assigned. Your performance for the first half of the course will be evaluated based on this assignment.

Tentative Course Calendar

Date	Material to Cover	Homework
28-Aug	Topic 1: consistency of extremum estimator	
4-Sep	Topic 1: asymptotic normality and empirical process	
11-Sep	Topic 1: quantile regression	
18-Sep	Topic 1: two-step estimator	
25-Sep	Topic 2: kernel regression, local polynomial	
2-Oct	Topic 2: machine learning methods	
09-Oct	Topic 2: double debiased machine learning	Homework 2 assigned
16-Oct	Fall Break	