

Economics 223b: Empirical Methods for Industrial Organization

Course objectives

The purpose of this course is to prepare students to do research in industrial organization. The material covered in this term relates largely to firm behavior in oligopolistic markets, as well as consumer and firm behavior in environments with asymmetric information. There will be an emphasis on empirical (data-related) work, although theoretical work will also be presented and discussed, with a view towards motivating (1) how theory can be tested; (2) how theoretical models can be adapted into empirical models, in order to estimate theoretically important parameters.

Grading

- In-class presentation of papers
- In-class presentation of research idea (lasting 20-30 minutes), with accompanying written (10-15 page) paper. The paper should be a detailed literature review on a specific topic/question, followed by an original research idea.
I encourage you to contact me as soon as possible regarding a topic for the presentation/paper.
- Computational, data-based problem sets.

Please check the course website (<http://www.hss.caltech.edu/~mshum/gradio/ioclass.html>) for announcements, as well as a good portion of the lecture notes and problem sets.

Course topics and readings

Below I have listed the topics, in the (tentative) order that they will be covered. For each topic, I will provide introductory lectures, and also assign students to present several recent papers in class. We may skip and/or dawdle on certain topics as the interests of the class and time constraints dictate.

- **Dynamic models**
 - Dynamic discrete-choice models
 - Estimation methodologies: simulation estimation, choice-probability inversion
 - Nonparametric identification
 - **Dynamic game models**: framework, estimation, applications
- **Auctions**
 - Theory (review)

- Parametric models
- Nonparametric approach
- Nonequilibrium/behavioral approaches
- Related models: elections/voting, adverse selection models (insurance, nonlinear pricing, search models)
- **Discrete Games**
 - Entry games
 - Estimation with incomplete models, multiple equilibria
 - Matching
- **Demand in Differentiated Product Markets**
 - Measuring market power: estimating demand functions
 - Differentiated Product Markets: discrete-choice modeling
 - Programme evaluation approach to estimating demand functions