Economics 220 C
Special Topics in Industrial Organization
Computational and Econometric Methods of Industrial Organization

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This course is designed as an introduction to numerical and statistical techniques employed in the modern structural research in Industrial Organization. As the main focus of the course is methods rather than models, it does not aim at covering all “classical” topics in the empirical IO (such as analysis of productivity, advertising, etc). During the course we will use as examples the following classes of models:

1. Models of demand on differentiated product markets.

2. Static games and auctions.

3. Dynamic games of incomplete information.

The main goal of this course is to provide students with a set of tools so that they can begin to write their own original research in empirical IO.

Requirements and grading:
Since the best method of learning the empirical tools is to apply them, there will be 5 large empirical exercises including work with real data. The final assignment will be write a research proposal for a project in empirical industrial organization or a related area. There will be no in class exam. The grade will be based on the problem sets and the final proposal. Students are encouraged to work together by discussing the papers and in implementing the estimators. It is instrumental that students familiarize themselves with the papers discussed during the class
before the class. It is also important to make sure that you are familiar with a suitable programming language (Matlab, Gauss, Fortran 77/90, C/C++) before the class. It will be implied that students are familiar with basic programming concepts and they will not be discussed in class.

1 Nonlinear Moment-Based Models: Demand on Differentiated Markets

• Technical background

• Empirical work


– Petrin, A. and Goolsbee, A. The Consumer Gains from Direct Broadcast Satellites and the Competition with Cable TV, forthcoming, Econometrica.
2 Systems of nonlinear equations: Discrete static games

– Technical background


– Empirical work

* Berry, S., Estimation of a Model of Entry in the Airline Industry, Econometrica, 60 (July 1992), 889-918


3 Systems of nonlinear functional equations: Dynamic games

- Technical background

- Empirical work


Hopenhayn, Hugo, Entry, Exit and Firm dynamics in Long-run Equilibrium, Econometrica (60), 1127-50.


Ryan, S. (2005), The Costs of Environmental Regulation in a Concentrated Industry, mimeo, MIT.