Economics 8103  
Microeconomic Theory  
Spring 2004 (First Mini)  

Syllabus

The basic aim of this course is to give an introduction to aspects of economic theory that relate to strategic behavior, and to economic problems associated with private information. Roughly, the material breaks down into three parts:

(*) **Noncooperative Game Theory:** In environments in which agents interact directly, rather than through anonymous markets, how do we model “equilibrium,” i.e., simultaneously rational behavior?

(*) **Economics of Information:** In important markets there can be partial or asymmetric information about the qualities of the goods and services being exchanged. In some circumstances this can lead to market breakdown. In other settings it leads to problems of optimal contract design.

(*) **Social Choice and Mechanism Design:** (To the extent time permits.) In many types of institutional design (e.g., constitutions) the designers have minimal information concerning the preferences of the agents who will inhabit the institution, so they must design institutions (i.e., games) that yield good outcomes for a wide variety of actual preferences. Social choice theory approaches this problem from a general and abstract perspective.

**Course Work and Grading**

There will be problem sets, an in-class midterm, and a two hour final. The problem sets will be distributed each Thursday and will be due the following Thursday, except that there will be no problem set for the week leading up to the final. Collaboration on the problem sets is permitted, provided that joint work and assistance are acknowledged, but
you are strongly advised to attempt to solve each problem on your own before discussing it with others. The problem sets will constitute 30% of the grade base, the midterm will count for 25%, and the final will constitute the remaining 45%.

Readings and Lecture Schedule

The primary text for the course is Microeconomic Theory by Mas-Colell, Whinston, and Green, abbreviated as MWG below. In addition for some material there will be various journal articles, as indicated below.

The following is a blow-by-blow description of lecture topics (not necessarily in one-to-one correspondence with class sessions) and associated readings. Judging from experience, it is unlikely that all topics will be covered.

Part I - Noncooperative Game Theory

1. What is a game? Fundamental issues of game theoretic modelling.
   MWG7

2. Rationalizability and Dominance.
   MWG8B, MWG8C, Pearce (1984)

3. Nash Equilibria and Bayesian Nash Equilibria.
   MWG8D, MWG8E, Nash (1951), McLennan and Tourky (2004)

4. Auctions.
   MWG23B, MWG23D

5. Perfection and other refinements.
   MWG8F, Myerson (1979)

6. Extensive games, perfect recall, Kuhn’s theorem.
   MWG7E

7. Backwards induction, subgame perfection, Bayesian Nash equilibrium.
   MWG9B

8. Sequential equilibrium.
Part II - Information Economics

   MWG13B, Akerlof (1970)

10. Signalling.
    MWG13C

11. Screening.
    MWG13D, Rothschild and Stiglitz (1976)

12. The Principal-Agent Problem.
    MWG14

Part III - Social Choice

    MWG23B

14. Dominant strategy implementation.
    MWG21E, MWG23C

15. Arrow’s theorem, and the median voter rule under single peaked preferences.
Bibliography


McClennen, A., and R. Tourky, “From Lemke-Howson to Kakutani,”


