Econ 283G: Advanced Microeconomic Theory

Syllabus: Topics in Information Economics and Contract Theory

Instructor: Wei Li Office: Sproul Hall 3131 Office hours: by appointment Email:wei.li@ucr.edu

Description and Requirements

1. Description

This is a topic class on information economics and contract theory. The purpose of the course is to give an introduction to some of the main topics in this field: adverse selection (signaling, screening), moral hazard, mechanism design, and communication in organizations. First, the course focuses on the role of private information in people's incentives to work (or to shirk), to distinguish themselves and to communicate (or to lie). Second, it studies the question of how to design optimal mechanisms, compensation schemes and organizations *given* people's private information.

The course will use game theoretical concepts developed in 200B extensively, but we will also develop some new tools such as equilibrium refinement and mechanism design as we go along. This is a quarterly class and consists of approximately 17 lectures. It requires some readings, two problem sets and one three hour final. Since this is an advanced course, I would try to make the course more research oriented and focus more than the core sequence on modeling issues.

2. Reference books

- Mas-Colell, Whinston, & Green (MWG), 1995, Microeconomic Theory.
- Milgrom and Roberts (1992), Economics, Organization and Management.
- Fudenberg, D. and J. Tirole (1991), *Game Theory*, Cambridge: MIT Press.

Course Outline

- 1. Information economics (5 sessions)
 - (a) Adverse Selection
 - (b) Signaling and Screening
 - (c) Reputation and Cheap Talk Games
 - (d) Non-linear Pricing

Reading:

- MWG, Chapter 13.
- Akerlof, G. (1970), "The Market for Lemons: Quality and the Market Mechanism," Quarterly Journal of Economics 84: 488-500.
- Spence, A. M. (1973), "Job Market Signaling," Quarterly Journal of Economics.
- Crawford, V., and J. Sobel (1982), "Strategic Information Transmission," Econometrica 50: 1431-51.
- Cremer, J. (1995), "Arm's Length Relationships," Quarterly Journal of Economics, CX (2).
- 2. Contract theory (7 sessions)
 - (a) Moral Hazard and Optimal Incentive Contract (2)
 - (b) Dynamic Moral Hazard (2)
 - (c) Implicit Incentive and Career Concerns (1)
 - (d) Property Right and Incomplete Contract Theory (2)

Readings:

- MWG, Chapter 14.
- Grossman, S. and O. Hart (1983), "An Analysis of the Principal-Agent Problem," Econometrica 51: 7-45.

- Holmstrom, B. (1982), "Moral Hazard in Teams," Bell Journal of Economics, 13: 324-340.
- Holmstrom, B. and P. Milgrom (1987), "Aggregation and Linearity in the Provision of Intertemporal Incentives," Econometrica, 55(2) p 303-328.
- Dewatripont, M., I. Jewitt and J. Tirole (1997), "Information Structures and Career Concerns," ECARE mimeo.
- Dewatripont, M., I. Jewitt and J. Tirole (1997), "Missions and Accountability of Government Agencies," ECARE mimeo.
- Holmstrom, B. (1982) "Managerial Incentive Problems: A Dynamic Perspective," in Essays in Economics and Management in Honor of Lars Wahlbeck.
- Hart, O. and J. Moore (1988), "Incomplete Contracts and Renegotiation," Econometrica, 56, 755-785.
- Hermalin, B. and M. Katz (1991), "Moral Hazard and Verifiability," Econometrica, 59: 1735-1754.
- Hart, O. and J. Moore (1998), "Foundations of Incomplete contracts," Review of Economics Studies, Vol 66 (1), 115-138.
- Tirole, J. (1998), "Incomplete Contracts: Where Do We Stand?" Econometrica, Vol 67(4), 741-781.
- 3. Mechanism Design and Auctions (4)
 - (a) Basic Mechanism Design (1-2)
 - (b) Efficient Mechanism (1)
 - (c) Auction: (1-2)

Readings:

- MWG, Chapter 23.
- Fudenberg, D. and J. Tirole (1991), Chapter 7.
- Milgrom, P. and R. Weber (1982), "A Theory of Auctions and Competitive Bidding," Econometrica 50(5):1089-1122.

- Myerson, Roger and M. Satterthwaite (1983), "Efficient Mechanisms for Bilateral Trading," Journal of Economic Theory, 29: 265-281.
- 4. Communication and Organizational Design (2)
 - (a) Computer science approach (1)
 - (b) Incentive approach (1)

Readings:

- Qian, Y. (1994), "Incentives and Loss of Control in an Optimal Hierarchy," Review of Economic Studies 61, 527-44.
- Van Zandt, Radner