Syllabus, Ec717a: Contract Theory: Part 1

Dilip Mookherjee

Fall 2015, Boston University Department of Economics

This is the first half of a course devoted to contract and organization theory. While it is an elective course for the micro theory field, it should be useful for students interested in applications to fields such as industrial organization, public economics and health economics.

This part of the course provides an introduction to mechanism design theory and its applications to pricing, auctions, bargaining, public goods, hierarchies and corruption. We start by learning how to solve for optimal contracts with a single agent in a static setting. This is subsequently extended to contexts with multiple agents in a static setting, covering topics in bargaining, auctions and public goods. This will be followed by dynamic extensions, with applications to durable goods monopoly and relational contracts. Finally, we shall consider applications to internal organization of firms and control of corruption.

A good reference for much of the material for all but the last section is the following textbool:

Contract Theory, by Patrick Bolton and Mathias Dewatripoint (BD hereafter), MIT Press, 2005.

It is more essential for you to read key journal articles or working papers, listed below.

Class: M,W 2-330, SSW546, Sept 2 – Oct 21.

Office Hours: W330-5pm, Th2-330pm (Room 500A, 264 Bay State Road)

Course website: http://people.bu.edu/dilipm/ec717/717hmpg.html

Prerequisites: First Year PhD courses in micro (Ec701, 703) or equivalent

Exams and Grading: Combination of a midterm, class presentations and a research proposal for a 2nd year paper (weights to be decided)

Academic Conduct: You are expected to know and understand the provisions of the CAS Academic Conduct Code. Cases of suspected academic misconduct will be referred to the Deans Office.

Sessions and Readings:

1. Single-Agent Adverse Selection (Sept 2,9): Optimal contracts for a single agent with private information: two types; continuum of types [BD, Ch. 2, esp. Sections 2.3.1 and 2.3.3; D Baron and R Myerson, "Regulating a Monopolist with Unknown Cost," Econometrica 1982.]

2. Multi-Agent Adverse Selection (Sept 14,16,21,23): Implementation concepts; optimal auction design, mechanisms for public goods and bilateral trade [BD, Ch. 7 (esp. Sections 7.2, 7.3); Ch. 7 of Fudenberg and Tirole, *Game Theory*, MIT Press; R Myerson, "Optimal Auction Design," Math of Operations Research 1981; R. Myerson and M Satterthwaite, "Efficient Mechanisms for Bilateral Trading," Journal of Economic Theory 1983.]

3. Contract Dynamics (Sept 28, 30): durable good monopoly [BD, Ch. 9 (esp. Sec 9.1.1), J Sobel and I Takahashi, "A Multistage Model of Bargaining," Review of Economic Studies 1983]; relational contracts [J Levin, "Relational Incentive Contracts," American Econ Rev 2003.]

4. Hierarchies (Oct 5,7): hierarchies and delegation [N Melumad, D Mookherjee and S Reichelstein, "Hierarchical Decentralization of Incentive Contracts," Rand Journal of Economics 1995; "Contract Complexity, Incentives and Value of Delegation," Journal of Economics and Management Strategy 1997]

5. Corruption Control (Oct 14,19,21): collusion-proof auctions [Y.K. Che and J. Kim, "Optimal Collusion-Proof Auctions," Journal of Economic Theory 2009]; supervision and collusion [J Ortner and S Chassang, "Making Collusion Hard: Asymmetric Information as a Counter-Corruption Measure", working paper, Boston University, 2014; D Mookherjee, A Motta and M Tsumagari, "Weak Ex Ante Collusion and Design of Supervisory Institutions," working paper, Boston University, 2015.]