Syllabus for Eco2102: Topics in Microeconomic Theory
Fall 2012
Department of Economics
University of Toronto

Lecture Time: Thursdays 4:00-6:00pm
Lecture Location:
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Description

This is a topic course in microeconomic theory oriented to PhD students in economics or management who have completed the first-year core sequence of microeconomic theory. The focus of this course will be contract theory (mostly mechanism design) with some selected applications. I will try and explain the underlying technique of a few main papers in each area and then talk about where the literature is heading. The last two weeks will be reserved for student class presentation.

Reference Texts

Vijay Krishna *Auction Theory*.
Bolton and Dewatripont *Contract Theory*.
Milgrom, *Putting Auction Theory to Work*.
Tilman Borgers *An Introduction to the Theory of Mechanism Design*

Grading

The main purpose of this course is to help you transit smoothly from taking course work to writing your own research papers. Students who registered in this course are required to write 2 referee reports, give a class presentation, and write a research proposal. The course grade will be decomposed as follows:

- Referee reports (40%, 20% each)
- Class presentation (20%)
- Research proposal (40%)

I will provide a list of papers (mostly recent job market papers), from which you should choose two of them to review and one of them to present in class. The paper you present can be one of the two papers you review or your research proposal/paper. Both reports and proposal should be typed up and submitted by email.

The referee report should be 3-4 pages with 1.5 line spacing. It is very important for you to be able to evaluate the

novelty/importance of different topics, which will be critical when you start to choose topics to write your dissertation. In the report, you should pay attention to the following. (1) Overall assessment of the paper. Why do you think the paper is (or is not) good? Why is the topic important/interesting? Is the idea creative? What's the most important insight of the paper? What's the main contribution to the literature? (2) Detailed critiques about the paper. For example, are the model assumptions sensible? Which assumption is critical? Are the results robust? What are the testable implications? What improvement you can suggest concerning the modeling, analysis, extensions, etc.?

The research proposal should be at least 6-7 pages research note with 1.5 line spacing and 1 inch margins. The research proposal could be theoretical or empirical, but the topic must be broadly related to the material covered in this course. If it is a theoretical, it should include motivation, related literature, formal model setup, preliminary results, and testable predictions (if any). If it is an empirical proposal, it should include motivation, related literature, theory model and its prediction, empirical identification strategy, and possible data sources. Talk to me before you finalize your topic for the proposal.

Referee Report 1: Due October 18, 2012
Referee Report 2: Due December 6, 2012
Research Proposal: Due December 13, 2012

Tentative Schedule

1) Preliminaries: Single Agent Screening

Mussa, M. and Rosen, S. (1978), "Monopoly and Product Quality," *Journal of Economic Theory.*
Borgers Mechanism Design Notes Chapter 2.
Matthews, S. and Moore, J. (1987), "Monopoly Provision of Quality and Warranties: An Exploration in the Theory of Multidimensional Screening," *Econometrica.*

2) Independent/Correlated Values Auction

Myerson (1981), "Optimal Auction Design," *Mathematics of Operations Research.*
Cremer and McLean (1985), "Optimal Selling Strategies under Uncertainty for a Discriminating Monopolist when Demands are Interdependent," *Econometrica*.
Bulow, J. and J. Roberts, (1989), "The Simple Economics of Optimal Auctions," *JPE*.
Cremer and McLean (1988), "Full Extraction of the Surplus in Bayesian and Dominant Strategy Auctions," *Econometrica*.
McAfee, P., and P. Reny (1992), "Correlated Information and Mechanism Design," *Econometrica*.

3) Trading

Myerson, R. B., and M. A. Satterthwaite (1983): Efficient Mechanisms for Bilateral Trading," *Journal of Economic Theory*.
Cramton, P., R. Gibbons, and P. Klemperer (1987): Dissolving a Partnership Efficiently," *Econometrica*.

4) Interdependent Values

Milgrom, P., and R. Weber (1982): A Theory of Auctions and Competitive Bidding," *Econometrica*.

Paul R. Milgrom and Robert J. Weber (1982), "The Value of Information in a Sealed-Bid Auction", *Journal of Mathematical Economics*.

Richard Engelbrecht-Wiggans, Paul R. Milgrom, Robert J. Weber (1983) "Competitive Bidding and Proprietary Information," *Journal of Mathematical Economics*.

5) Multiple Item Auctions

Milgrom, P., (2000), Putting Auction Theory to Work: Simultaneous Ascending Auction," *JPE*.

Ausubel, L. and Milgrom, P., 2002, Ascending Auctions with Package Bidding," *Frontiers of Theoretical Economics*.

Ausubel, L., (2004), "An Efficient Ascending-Bid Auction for Multiple Objects," *American Economic Review*.

Binmore, K. and Klemperer, (2002), The Biggest Auction Ever: the Sale of British 3G Telecom Licenses," *Economic Journal*.

6) Dynamic Mechanisms

Courty and Li (2000), "Sequential Screening," *Review of Economic Studies*.

Eso and Szentes (2007), "Optimal Information Disclosure in Auctions and the Handicap Auction," *Review of Economic Studies*.

Bergemann and Valimaki (2010), "Dynamic Pivotal Mechanisms," *Econometrica*.

7) Mechanism Design without Transfers: One Sided Matching

Zhou, L., (1990), On a Conjecture by Gale About One-Sided Matching Problems," *Journal of Economic Theory*

Abdulkadiroglu, A., and Sonmez, T., (1998), Random Serial Dictatorship and the Core from Random Endowments in House Allocation Problems," *Econometrica*.

Roth, A.E. (1982), Incentive Compatibility in a Market with Indivisible Goods," *Economics Letters*.

Hylland, A. and Zeckhauser, R., (1979), The Efficient Allocation of Individuals to Positions," *JPE.*

Bogomolnaia, A. and Moulin, H., (2001), A New Solution to the Random Assignment Problem," *Journal of Economic Theory.*

8) Mechanism Design without Transfers: Two Sided Matching

Gale, D. and Shapley, L., (1962), "College Admissions and the Stability of Marriage," *American Mathematical Monthly*.

Roth and Sotomayor (1990), "Two Sided Matching: A Study in Game-Theoretic Modeling and Analysis." Cambridge University Press. Chapters 2-5.

9) Moral Hazad

Holmstrom (1979), "Moral Hazard and Observability," *Bell Journal of Economics*.

Rogerson (1985), "The First-Order Approach to Principal-Agent Problems," *Econometrica*.

Mirrlees (1999), "The Theory of Moral Hazard and Unobservable Behavior: Part I," *Review of Economic Studies*.

Holmstrom and Milgrom (1987), "Aggregation and Linearity in the Provision of Intertemporal Incentives," *Econometrica.*

Holmstrom and Milgrom (1991), "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics, & Organization*.

10) Relational Contracting

Macleod and Malcomson (1989), Implicit Contracts, Incentive Compatibility, and Involuntary Unemployment," *Econometrica*.

Macleod and Malcomson (1998), Motivation and Markets," *American Economic Review*.

Levin (2003), Relational Incentive Contracts," *American Economic Review*.

Levin (2002), Multilateral Contracting and the Employment Relationship," *Quarterly Journal of Economics*.