

ECON399N Applied Game Theory: Bargaining and Auctions
Summer 2010

Time: Tuesday, Thursday 10:00 – 12:50, from Jul. 6th. to Aug. 5th.

Venue: 4505

Instructor: Kyungmin (Teddy) Kim (kmkim@ust.hk)

Office: 2376

Office hours: Tuesday 2:30 p.m. – 3:30 p.m. or by appointment

Course Website: <https://sites.google.com/site/econ399n/>

Description:

Bargaining and auction are two common ways to allocate scarce resources in the economy. This course introduces economic theories of bargaining and auctions to advanced undergraduate (and graduate) students.

Learning Outcomes:

On completion of the course, students are expected to be able to:

- Describe strategic problems in bargaining and auctions as formal game problems.
- Apply insights from general game theory to bargaining and auction problems.
- Understand the incentives people face in bargaining and auctions and how the incentives affect economic outcomes.

Teaching Approach:

This course mainly consists of lectures and classroom discussions. Students are expected to read assigned reading before the class and encouraged to ask questions during the lecture.

Assessment Scheme and Course Organization:

- The course grade will be determined by following components.
 - Problem Set (2): 50%
 - Presentation: 50%
- There will be 2 problem sets and announced in class and due in a week. It will be collected in class. Late submission is not accepted in any circumstances.
- If a student finds difficulties in the course and has any concern about the course, it is his/her benefit to contact me at the early stage.

Learning environment:

Matured conduct in classroom is the requirement for this course. Distractive behaviors such as use of cell phone, instant messaging and chatting are not tolerated. Violation of this rule will result in significant deduction of points from student's grade. Please refer to following website for the guideline for good learning environment:

http://www.ust.hk/vpao/conduct/good_learning_experience.pps.

Academic Honesty and Integrity:

Honesty and Integrity is central value in HKUST. Please be aware of the importance and maintain high standard of honesty in the problem sets and examinations in this course. Familiarize yourself

to the university rules and the HKUST academic honor code by visiting following website:
<http://www.ust.hk/vpao/integrity/>.

In this course, you are allowed to form study groups and discuss the materials in the problem sets. However, you are not allowed to copy works of others and each member of the study group has to submit the assignment on his/her own.

Course Outline (subject to changes)

Part I. Bargaining with complete information

1. Cooperative bargaining solutions: Nash and Shapley
2. Rubinstein-Binmore bargaining games
3. Variants of Rubinstein-Binmore: Merlo and Wilson (1995, 1998), Yildiz (2003, 2004)

Part II. Bargaining with incomplete information

1. Mechanism design approach: Myerson and Satterthwaite (1983)
2. Coase conjecture: Fudenberg, Levin, and Tirole (1985), Gul, Sonnenschein, and Wilson (1986)
3. Reputation: Abreu and Gul (2000)
4. Uncertainty about uncertainty: Feinberg and Skrzypacz (2005)
5. Bargaining with interdependent values: Deneckere and Liang (2006)

Part III. Auctions

1. Revenue equivalence theorem and optimal auctions: Myerson and Satterthwaite (1981)
2. Interdependent value auction and Linkage principle: Milgrom and Weber (1982)
3. All-pay auctions: Siegel (2009)

Paper List

Let me know your choice (and team members) by July 12th.

1. Gul, F. (1989), "Bargaining foundations of Shapely value," *Econometrica*, Vol. 57, No. 1, pp. 81-95
2. Rubinstein, A. and A. Wolinsky (1985), "Equilibrium in a market with sequential bargaining," *Econometrica*, Vol. 53, No. 5, pp. 1133-1150.
3. Merlo, A. (1997), "Bargaining over governments in a stochastic environment," *Journal of Political Economy*, 105, pp. 101-131.
4. Compte, O. and P. Jehiel (2004), "Gradualism in bargaining and contribution games," *Review of Economic Studies*, Vol. 71, No. 4, pp. 975-1000.
5. Sieg, H. (2000), "Estimating a bargaining model with asymmetric information: evidence from medical malpractice disputes," *Journal of Political Economy*, 108, pp. 1006-1021.
6. McAfee, R.P. and T. Wiseman (2008), "Capacity choice counters Coase conjecture," *Review of Economic Studies*, 75, pp. 317-332.
7. Gul, F. (2001), "Unobservable investment and the hold-up problem," *Econometrica*, Vol. 69, No. 2, pp. 343-376.

8. Myerson, R.B, and M.A. Satterthwaite (1983), "Efficient mechanisms for bilateral trading," *Journal of Economic Theory*, 29, pp. 265-281.
9. Samuelson, W. (1984), "Bargaining under asymmetric information," *Econometrica*, Vol. 52, No. 4, pp. 995-1005.
10. Dang, T.V. (2008), "Bargaining with endogenous information," *Journal of Economic Theory*, 140, pp. 339-354.
11. Hafalir, I. and V. Krishna (2008), "Asymmetric auctions with resale," *American Economic Review*, 98:1, pp. 87-112.
12. Che, Y.-K. and I. Gale (1998), "Caps on political lobbying," *American Economic Review*, 88, pp. 645-651.
13. Che, Y.-K. and I. Gale (2003), "Optimal design of research contests," *American Economic Review*, 93, pp. 646-671.
14. Eso, P. and B. Szentes (2007), "Optimal information disclosure in auctions and the Handicap auction," *Review of Economic Studies*, 74, pp. 705-731.
15. Kim, J. (2008), "The value of an informed bidder in common value auctions," *Journal of Economic Theory*, 143, pp. 585-595.
16. Demarzo, P.M., I. Kremer, and A. Skrzypacz (2005), "Bidding with securities: auctions and security design," *American Economic Review*, Vol. 95, No. 4, pp. 936-959.
17. Levin, D. and J.L. Smith (1994), "Equilibrium in auctions with entry," *American Economic Review*, Vol. 84, No. 3, pp. 585-599.

“... a thorough analysis of a few models is more rewarding than short discussions of many models.” - in the introduction of *Bargaining and Markets* by Martin J. Osborne and Ariel Rubinstein.