Course Outline: Mechanism Design (ECON 4206)
University of Connecticut
Spring 2013

Course Meeting Place: Oak 108
Course Times: 1-1:50 M/W/F
Professor: V. Knoblauch
email: vicki.knoblauch@uconn.edu
Office hours: by appointment

Course Description: One-semester introduction to mechanism design. Mechanisms are designed to induce people to act in such a way as to promote social welfare. Topics include public goods provision, 2-sided matching markets and peer evaluation of performance.

Prerequisites: ECON 2208 and 2209. Strongly Recommended Preparation: Well developed mathematical reasoning skills, ability to work in small groups on an independent project.**

Note: This is a 4000 level course and therefore the course content and requirements will be at a more advanced level than a 3000 level course.

Course Requirements and Grades:

1. Project: Students will work in small groups (2-3). The project will consist of reading several journal articles on a topic (the literature review), providing a new research question in the field of mechanism design and making a first step towards writing a paper in the area. While the final project is not expected to be a publishable piece of work, students are expected to produce a new idea and results in the area of mechanism design. The project would serve as a good start (or in some cases close to a finished product) for a Master's Degree paper or an honor's thesis. It can also serve as a good start for a PhD thesis. Students will present their findings. More on specifics of the project later. Free riding will not be possible. **Course Grade 1/3**

2. Exams: Course Grade 1/3

3. Short Quizzes, Homework Problems and Discussion Questions. You will be expected to attend class. In class you will be participating in class discussion, taking quizzes and presenting solutions to assigned problems.   **Course Grade 1/3.**

Note: If you receive a D or an F on any one component of the course requirements, that will be the grade you receive in the course

Exam Schedule: Test 1 Monday , February 18th
                     Other tests: TBA.
Note: Keep the final exam date open for presentation of projects.

Project Schedule:

Wednesday February 6th. Teams formed. I want to see a list of names associated with each team by this date.

Friday March 1st. A project idea. Each team will need to have a concrete project idea by this date and at least one paper related to the idea chosen by this date. A write-up of 1-2 pages is required. and in some cases a short presentation in class of the idea.

Monday April 22nd. Project presentations begin.

Final Week of Class: Hand in final project write-up.

Note: Students are responsible for forming and maintaining teams. If there is a change in team membership after the February 6th please let me know.

Missed Lectures: If you miss a lecture, I strongly advise you to get a copy of a fellow student's lecture notes and go over the material with him/her. My lecture notes are not available Some of the material will be available on HuskyCT.

Comments about the Readings: The main material for the course will be your lecture notes, class discussions and assigned readings. Students may want to consider buying a new or used game theory textbook at the advanced undergraduate/graduate level. A good example of a text like this is by Eric Rasmussen, *Games and Information: an introduction to game theory*, Blackwell 1994, 2001, (some of the chapters of his book can be accessed for free at his personal website).   There will be required readings on each topic (see reading list below). There may be additional readings assigned if needed. Most readings can be found on the library website by looking up the journal article. A few of the readings are in the form of chapters. When possible these will be posted on HuskyCT

Tips on How to Perform Well in this Course:

1. Begin work on your group projects as early as possible.
2. Concentrate on improving your problem solving skills. While the ability to do
 advanced mathematics is not necessary, strong mathematical skills are required
 3. **Keep in mind that this is not a course where you can just get by.** This is a course that requires your full participation. To do well in the course you need to attend class.

Course Topics and Readings

1. Introduction to Mechanism Design: Groves-Clarke Mechanism and Maskin Example

Maskin, E. (2007) Nobel Prize Award Lecture, "Mechanism Design: How to Implement Social Goals," (available on the web)

2. Matching Mechanism

Boudreau, J.W. and V. Knoblauch "Preferences and the Price of Stability in Matching Markets," forthcoming in *Theory and Decision.*

Boudreau, J.W. and V. Knoblauch (2010). "Marriage Matching and Intercorrelation of Preferences," *Journal of Public Economic Theory,* 12 (3), 587—602.

Gale, D. and L.S. Shapley (1962). "College Admissions and the Stability of Marriage," *Amer. Math. Monthly,* 69 (1), 9—15.

Roth, A.E. (2008). "Deferred Acceptance Algorithms: History, Theory, Practice and Open Questions," *International Journal of Game Theory,* 36, 537-569.

Roth, A.E. and E. Peranson (1999). "The Redesign of the Matching Market for American Physicians: Some Engineering Aspects of Economic Design,". *American Economic Review*, 89 (4), 748—780.

Roth, Alvin E. and Marilda Sotomayor. Two Sided Matching. A Study in Game-Theoretic Analysis, Econometric Society Monographs no.18. Cambridge University Press. (1990). Chapter 1.

Teo, C.P., J. Sethuraman and W. P. Tan (2001). "Gale-Shapley Stable Marriage Problem revisited: Strategic issues and applications," *Management Science*, 47 (9), 1252--1267.

3. Peer Evaluation

Boudreau, J. W. and V. Knoblauch (2011). "Dividing Profits Three Ways: Impartiality vs Consensuality," *Math Social Sciences,* 62: 79-86.

Brams, S. J., M. A. Jones, and C. Klamler (2006). "Better ways to cut a cake," *Notices of the American Mathematical Association* 53, 1314-1321.

de Clippel, G, H. Moulin, and N. Tideman, (2008). "Impartial division of a dollar," *Journal of Economic Theory* 139, 176-191.

Tideman, T. N., and F. Plassmann (2008). "Paying the partners," *Public Choice,* 136, 19-37.

Knoblauch, V. (2009). "Three agent peer evaluation," *Economics Letters,* 105, 312-314..

4. Principal/Agent Problems and Mechanisms to Combat

Paul Milgrom and John Roberts, *Economics, Organization and Management,* Prentis Hall (1992). Chapter 5. (on reserve)

Staten, Michael and J. Umbeck, (1982). "Information Costs and the Incentives to Shirk: Disability Compensation of Air Traffic Controllers," *The American Economic Review* 72, 1023-1037.

5. Matching Mechanisms and Strategic Behavior

Roth, Alvin E. and Marilda Sotomayor. Two Sided Matching. A Study in Game-Theoretic Analysis, Econometric Society Monographs no.18. Cambridge University Press. (1990). Chapter 2

6. Auctions

Ausubel, L., "Auction Theory for the New Economy" prepared for the New Economy Handbook (Derek C. Jones ed.) Academic Press 2003. (can be found on web)

Berk, J.B., E. Hughson and K.Vandezande (1996). "The Price is Right but Are the Bids? An Investigation of Rational Decision Theory," *The American Economic Review* 86, 954-701.

Gardner, Roy. Games for Business and Economics. John Wliey and Sons Inc. (1995). Chapter 11.