Econ 8747: Game Theory

Spring 2001

- Class Time: MW 3:00 - 4:15
- Room: Econ 2
- Office Hours: After class and by appointment
- Office: Economics 14 C (Behind Room 14 in the Economics Basement.)
- Date of Final: Saturday May 5
- Requirements: These depend upon the student, as I am always open to mutually improving negotiations. See below.

Requirements

Minimal Requirements:

- Final
- Course Project: Literature Survey
- Take home quizzes/in class problem solving.

Supplemental/Alternative Requirements

- Course Project
- Paper presentation/defense/critique/extension
- Unpaid RA work (programming in your favorite solver)
- Paper(s) specific oral quiz
- Class participation!
- An idea of yours?

Some notes on the requirements: It will be very difficult (but not impossible) to get an "A" doing only the minimal requirements.
A literature survey (first draft due in week 11, final draft due on date of final) is a minimal requirement for a course project.
You may use items from the supplemental list to replace a minimal requirement, or to augment one in which you would prefer to decrease your effort (e.g. a short literature survey might combine with something else to fulfill the course project requirement.) They may also be considered extra credit.

Course Description

The purpose of this class is provide a survey of game theoretic techniques. The exact subject matter to be covered is spelled out in the reading list (below.)
Independent projects include: directed literature surveys, class presentations, investigation of outstanding problems, and presentation of published papers. Throughout the class I will suggest projects to students. Students may also make suggestions, but these must be approved.
Below is some useful stuff. The PDF files look like junk in Netscape, but should print out fine.

- Reading List

http://www.colorado.edu/Economics/spring01-syllabi/spring01-8747-001syllabus.htm 1/23/01
Reference List for Game Theory

Spring 2001

Note: Except for Cooperative and Evolutionary Game Theory, Fudenberg and Tirole should serve as
your first reference on every subject.

GEB: Games and Economic Behavior
EMA: Econometrica
JET: Journal of Economic Theory
IJGT: International Journal of Game Theory
AER: American Economic Review
QJE: Quarterly Journal of Economics
JPE: Journal of Political Economy
RESTud: Review of Economic Studies

1. Description of games
   - Roger Myerson, Nash Equilibrium and the History of Economic Theory. JEL 1999

2. Rationality, Dominance, Weak Dominance etc
   - Douglas Bernheim, Rationalizable strategic behavior. EMA 1984
   - David Pearce, Rationalizable strategic behavior and the problem of perfection. EMA 1984
   - Shimoji and Watson, Conditional Dominance, rationalizability and game forms. JET 1998
   - David Roth, Rationalizable predatory pricing. JET 1996
   - Larry Samuelson, Dominated strategies and common knowledge. GEB 1992
   - Marx and Swinkels, Order independence for iterated weak dominance. GEB 1997

3. Equilibrium: Nash, Refinements, Correlated
   - Selten, Reexamination of the Perfectness concept for equilibrium points in extensive
     form games. IJGT 1975.
   - Myerson, Refinements of the Nash equilibrium concept. IJGT 1975.
   - Aumann and Brandenberger, Espitemic conditions for equilibrium. EMA 1995
   - Hal Varian, A model of Sales. AER 1980

4. The extensive form games with perfect information
   - *Aumann Backward induction and common knowledge of rationality. GEB 1995
   - Selten, A Reexamination of the perfectness ...

5. Hyperbolic Discounting
   - O'Donoghue and Rabin, Doing it now or doing it later. AER 1999
   - David Laibson, Golden Eggs and Hyperbolic Discounting. QJE 1997
6. The Economics of Altruism
   o Gary Becker, A theory of social interactions. JPE 1974
   o *Ted Bergstrom, A fresh look at the rotten kid theorem and other household mysteries. JPE 1989
   o Bernheim and Stark, Altruism within the family reconsidered: do nice guys finish last. AER 1988
   o Lindbeck and Weibull, Altruism and time consistency: the economics of fait accompli. JPE 1988
   o Bruce and Waldman, Transfers in kind: why they can be efficient and non-paternalistic. AER 1991
   o *Jack Robles, Paternal altruism or smart parent altruism? CU WP 98-10
   o Mathew Rabin, Incorporating fairness into economics and game theory. AER 1993
   o Ray and Ueda, Egalitarianism and incentives. JET 1996
   o Bernheim, Shleifer adn Summers, The strategic bequest motive. JPE 1985

7. Extensive form games without perfect information
   o Van Damme, Stable Equilibria and forward induction. JET 1989.

8. Strategic Information Transmission
   o *Cho and Kreps, Signalling games and stable equilibria. QJE 1987
   o Mailath, Okuno-Fujiiwa and Postlewaite, Beleif based refinements in signalling games. JET 1993
   o *Farrell, Meaning and credibility in cheap talk games. GEB
   o Milgrom and Roberts, Limit pricing and entry under incomplete information, an equilibrium analysis, EMA 1982
   o Milgrom, Good news and bad news, representation and applications, Rand.

9. Folk Theorems for Repeated Games
   o Fudenberg and Maskins. The Folk Theorem in repeated gmaes with discounting or with incomplete information. Econometrica 1986.
   o Roy Radner. Collusive Behavior in non-cooperative epsilon equilibria in oligopolies with long but finite lives. JET 1980.

10. Renegotiation
    o *Benoit and Krisna, Renegotiation in finitely repeated games. EMA 1993
    o Bergin and MacCleod, Efficiency adn renegotiation in repeated games. JET 1993
    o Andreas Blume, Interplay communication in repeated games. GEB 1994
    o Geir Asheim, Extending renegotiation proofness to infinite horizon games. GEB 1991
    o Bernheim and Ray, Collective dynamic consistency in repeated games. GEB 1989
    o Farrel and Maskin, Renegotiation in Repeated Games. GEB 1989

11. Cooperative Game Theory
    o Freidman, Game theory with applications to economics chapter 6 and 7
    o *Nash, The Bargaining problem. EMA 1950
    o Kalai and Smordinski, Other Solutions to Nash's problem. EMA 1975
12. Noncooperative Bargaining
   - Rubinstein, Perfect equilibrium in a bargaining model. EMA 1982
   - Joel Watson, Alternating offer bargaining with two sided incomplete information. RESTud 1999

13. Reputation
   - Kreps, Milgrom, Roberts and Wilson, Reputation and imperfect information: predation, reputation and entry deterence: rational cooperation in the finitely repeated prisoner's dilemma. JET 1981
   - Aumann and Sorin, Cooperation and Bounded recal. GEB 1989
   - Klaus Schmidt, Reputation and equilibrium characterization in repeated games with conflicting interests, Econometrica 1993, 325-352
   - Cripps and Thomas, Reputation and Commitment in Two person games without discounting, EMA, 1995, 1401-1420
   - Joel Watson, A reputation refinement withouth equilibrium, EMA 1993, 199-206
   - Celentani, Fudenberg and Levine, Maintaining a reputation against a long lived opponent EMA 1996, 691-704

14. Evolutionary Game Theory
   - Vince Crawford, An Evolutionary interpretation of VHBB's experimental results on coordination. GEB 1991
   - Gilboa and Matsui, Social Stability and Equilibrium, EMA 1991
   - Peyton Young, An Evolutionary Model of Bargaining, JET 1993
   - Peyton Young, The Evolution of Conventions, EMA 1993
   - Larry Samuelson, Stochastic Stability with alternative best replies. JET
   - Noldeke and Samuelson, The Evolution of Backwards and Forwards Induction, GEB 1993
   - Jack Robles, An Evolutionary Folk Theorem For Finitely Repeated Games CU WP 99-
   - Kim and Sobel, An Evolutionary Approach to Preplay Communication EMA 1995