Department of Economics
The Ohio State University
Economics 817: Game Theory

Syllabus and Reading List

James Peck and David Schmeidler   M-W 11:30 - 1:18
Autumn 2009   Derby 0047
www.econ.ohio-state.edu/jpeck/Econ817.htm

Course Objectives: This course aims to thoroughly treat the field of Game Theory, and provide you with useful tools for understanding current research and performing your own research in the field. This year's focus is on material not covered in Schmeidler's Summer 2009 course, and on applied game theory topics.

Course Requirements: Students will present a game theory article to the class, and write a short 3-5 page referee's report (on another article that was not presented in class). The presentation and referee's report each count for 45% of the grade. The remaining 10% is based on class participation and occasional homework assignments. Homework grades are based on full credit for a good faith effort, zero credit otherwise.

Textbook: Osborne, M. J. and A. Rubinstein, "*A Course in Game Theory*," The MIT Press, 1994. We will use the abbreviation, O-R.

Other sources (not required):

Fudenberg and Tirole, "*Game Theory*," The MIT Press, 1992.
Myerson, "*Game Theory: Analysis of Conflict*," Harvard University Press, 1991.

I. Cooperative Game Theory

O-R, chapter 13.

II. Games in Strategic (Normal) Form

1. Rationalizability and Iterative Elimination of Strictly Dominated Actions.

Pearce, D. G., "Rationalizable Strategic Behavior and the Problem of Perfection," *Econometrica* 52 1984, 1029-1050.

O-R, chapter 4.

III. Extensive Form Games with Perfect Information.

1. Repeated Games and Folk Theorems.
O-R, chapter 8.

Fudenberg, D. and E. Maskin, "The Folk Theorem in Repeated Games with Discounting or with Incomplete Information," *Econometrica* 54(3), 1986, 533-554.

IV. Extensive Form Games with Imperfect Information.

1. Sequential Equilibrium.
O-R, chapter 12.

2. Perfect Bayesian Equilibrium for games with observable actions, signaling games.
O-R, chapter 12.

V. Classical Models of Decision Making in Games.

Von Neumann, J. and O. Morgenstern, *Theory of Games and Economic Behavior*, 1944, Chapter 1.

Anscombe, F. J. and R. J. Aumann, "A Definition of Subjective Probability," *The Annals of Mathematical Statistics*, Vol. 34 No. 1, 1963, 199-205.

VI. Articles in Game Theory.

1. Global Games

Morris, S. and H.-S. Shin, "Unique Equilibrium in a Model of Self-Fulfilling Currency Attacks," *American Economic Review* 88(3), June 1998, 587-97.

Carlsson, H. and E. van Damme, "Global Games and Equilibrium Selection," *Econometrica* 61(5), September 1993, 989-1018.

Angeletos, G-M, C. Hellwig, and A. Pavan, "Dynamic Global Games of Regime Change: Learning, Multiplicity, and the Timing of Attacks," *Econometrica* 75(3), 2007, 711-756.

2. Common Knowledge

Aumann, R. J., "Agreeing to Disagree," *Annals of Statistics*, 1976.

Aumann, R. J., "Correlated equilibrium as an expression of Bayesian rationality," *Econometrica*, January 1987, 1-18.

Milgrom, P. and N. Stokey, "Information, Trade, and Common Knowledge," *J. Econ. Theory*, 26, 1982, 17-27.

Morris, S., "Trade with Heterogeneous Prior Beliefs and Asymmetric Information," *Econometrica*, Vol. 62, No. 6, 1994, 1327-1348.

3. Mechanism Design

Myerson, R., and M. Satterthwaite, "Efficient Mechanisms for Bilateral Trading," *Journal of Economic Theory*, 29 (1983), 265-281.

Cremer, J. and R. McLean, "Full extraction of the surplus in Bayesian and dominant strategy auctions," *Econometrica* (1988), 1247-1258.

Bergemann, D. and S. Morris, "Robust Mechanism Design," *Econometrica* (2005), 1771-1813.

Myerson, R., "Optimal Auction Design," *Mathematics of Operations Research* 6 (1981), 58-73.

Jackson, M.O. and H. Sonnenschein, "Overcoming Incentive Constraints," *Econometrica* 75(1), 2007, 241-258.

4. Oligopoly

Vives, X., "Aggregation of Information in Large Cournot Markets," *Econometrica* 56 (1988), 851-876.

Dasgupta, P. and E. Maskin, "The existence of equilibrium in discontinuous economic games, II: Applications," *Review of Economic Studies*, 53 (1986), 27-41.

Reynolds, S. and B. J. Wilson, "Bertrand-Edgeworth Competition, Demand Uncertainty, and Asymmetric Outcomes," *Journal of Economic Theory*, vol. 92, no. 1 (May 2000).

Bergemann, D. and J. Valimaki, "Learning and Strategic Pricing," *Econometrica* 64(5), 1996, 1125-1149.

Singh, N. and X. Vives, "Price and Quantity Competition in a Differentiated Duopoly," *Rand Journal of Economics*, Winter 1984, 546-554.

5. Market Games

L. S. Shapley and M. Shubik, "Trade using one commodity as a means of payment," *J. Polit. Econ.* 85 (1977), 937-968.

J. Peck and K. Shell, "Liquid markets and competition," *Games Econ. Behav.* 2 (1990), 362-377.

6. Timing Games.

Bulow, J. and P. Klemperer, "Rational frenzies and crashes," *J. Polit. Econ.*, 102 (1), 1994, 1-23.

Chamley, C. and D. Gale, "Information Revelation and Strategic Delay in a Model of Investment," *Econometrica* 62 (1994), 1065-1085.

Bulow, J. and P. Klemperer, "The Generalized War of Attrition," *American Economic Review* 89 (1999), 175-189.

Dan Levin and James Peck, "Investment Dynamics with Common and Private Values," *Journal of Economic Theory* 143(1), 2008, 114-139.

Dan Levin and James Peck, "To Grab for the Market or to Bide One's Time: A Dynamic Model of Entry," *RAND Journal of Economics*, Vol. 34, No. 3, Autumn 2003, 536-556.

Smith, L. and P. Sorensen, "Pathological Outcomes of Observational Learning," *Econometrica* 68(2), 2000, 371-398.

Callander, S. and J. Horner, "The Wisdom of the Minority," *Journal of Economic Theory,* 2009, 1421-1439.

Ennis, H.M. and T. Keister, "Run equilibria in the Green-Lin model of financial intermediation," *Journal of Economic Theory,* 2009, 1996-2020.

7. Bargaining with Imperfect Information.

Ausubel, L. M. and R. Deneckere, "Durable Goods Monopoly with Incomplete Information," *Review of Economic Studies* 59 (1992), 795-812.

Gul, F., H. Sonnenschein, and R. Wilson, "Foundations of Dynamic Monopoly and the Coase Conjecture," *Journal of Economic Theory* 39 (1986), 155-190.

Horner, J. and N. Vieille, "Public vs. Private Offers in the Market for Lemons," *Econometrica*, 2009, 29-70.

8. Sender-Receiver Games.

Crawford, V. P. and J. Sobel, "Strategic Information Transmission," *Econometrica* 50(6), 1982, 1431-1451.

Battaglini, M., "Multiple Referrals and Multidimensional Cheap Talk," *Econometrica* 70(4), 2002, 1379-1401.

Krishna, V. and J. Morgan, "A Model of Expertise," *Quarterly Journal of Economics* 116(2), 2001, 747-775.

9. Repeated and Multi-stage Games with Imperfect Information

Abreu, D., D. Pearce, and E. Stacchetti, "Toward a Theory of Discounted Repeated Games with Imperfect Monitoring, *Econometrica* 58(5), September 1990, 1041-1063.

Cripps, M. W., G. Mailath, and L. Samuelson, "Imperfect Monitoring and Impermanent Reputations," *Econometrica*, March 2004, 407-432.

Fudenberg, D. and D. K. Levine, "Maintaining a Reputation when Strategies are Imperfectly Observed," *Review of Economic Studies* 1992, 561-579.

Bagwell, K., "Commitment and Observability in Games," *Games and Economic Behavior*, February 1995, Vol. 8, Number 2, 271-280.

10. Political Economy

Baron, D. P. and J. A. Ferejohn, "Bargaining in Legislatures," *American Political Science Review*, Vol. 83 No. 4, 1989, 1181-1206.

Feddersen, T. J. and W. Pesendorfer, "The Swing Voter's Curse," *American Economic Review*, Vol. 86 No. 3, 1996, 408-424.

Callander, S., "Electoral Competition in Heterogeneous Districts," *Journal of Political Economy*, Vol. 113 No. 5, 2005, 1116-1145.

Students with disabilities that have been certified by the Office for

Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/