

ECO-5116
Topics in Microeconomic Theory
Spring 2009

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Meeting Times: T TH 3:35-4:50
Location: BEL 203
Office Hours: T TH 11-12:00 PM

Course Description:

This class will cover a wide range of issues in microeconomic theory dealing with the theory of information and incentives. This will include an introduction into the theory of mechanism design which is concerned with how to design mechanisms to elicit optimal outcomes in a variety of market and social choice contexts. The course will begin with an overview of some of the basic concepts from game theory as a means of modeling strategic situations and strategic choice. The next section of the course will deal with classic issues in information economics including moral hazard and adverse selection. The next three sections will deal with the main areas of the mechanism design literature such as the principal agent problem dealing with contract design issues, the design of optimal auctions and other market institutions and then we will look at social choice issues or the design of optimal voting institutions. In the last few weeks of the course we will look at some applications of this theory to the design of real mechanisms.

Course Texts:

All required readings will be from Fudenberg and Tirole, Mas-Collell, Whinston and Green or journal articles. The other books listed may be helpful for certain parts of the course and the syllabus will refer to specific sections of some of them that cover the relevant material. Students are encouraged to seek out those books they find most helpful.

1. *Game Theory* by Drew Fudenberg and Jean Tirole, MIT Press; ISBN: 0-262-06141-4.
2. *Advanced Microeconomic Theory* Second Edition, by Geoffrey A. Jehle and Philip J. Reny, 2001, Addison Wesley; ISBN: 0-321-07916-7.
3. *Microeconomic Theory* by Andreu Mas-Colell, Michael D. Whinston, Jerry R. Green, June 1995, Oxford Univ Press; ISBN: 0195073401.
4. *Auction Theory* by Vijay Krishna, Academic Press; ISBN: 0-12-426297-X.
5. *Topics in Microeconomics : Industrial Organization, Auctions and Incentives* by Elmar Wolfstetter, November 1999, Cambridge Univ Pr; ISBN: 0521645344.
6. *Game Theory for Applied Economists* by Robert Gibbons, June 1992, Princeton Univ Pr; ISBN: 0691003955.

Grading:

One midterm exam (35%), Final exam (45%), Homework (20%).

Course Outline: A * indicates that the reading is required. A • indicates that it is suggested.

1. Introduction to Game Theoretic Concepts and Modeling

- * FT 1-5
- * Rabin, Matthew, 2000, "Risk Aversion and Expected-Utility Theory: A Calibration Theorem," *Econometrica*, Vol. 68, No. 5, pp. 1281-1292.
- * Rabin, Matthew and Richard H. Thaler, 2001, "Anomalies: Risk Aversion," *Journal of Economic Perspectives*, Vol. 15, No. 1, pp. 219-232.
- JR Chapter 7
- MWG Chapters 7, 8 and 9
- Cox, James C. and Vjollca Sadiraj, 2001, "Risk Aversion and Expected-Utility Theory: Coherence for Small- and Large-Stakes Gambles" Working Paper University of Arizona.

2. Theory of Imperfect Information

i. Adverse Selection

- * MWG 436-450
- Wolfstetter p. 243-248
- * Akerlof, George, 1970, "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, Vol. 84 No. 3 pp. 488-500.

ii. Signaling

- * FT Chapter 8 and Section 11.2
- MWG 450-459
- Gibbons Chapter 4, Wolfstetter Chapter 10
- * Spence, Michael, 1973 "Job Market Signaling," *Quarterly Journal of Economics*, Vol. 87 No. 3, pp.355-374.

iii. Screening:

- * MWG 460-467
- Wolfstetter p.252-266
- * Rothschild, Michael and Joseph Stiglitz, 1976 "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information," *Quarterly Journal of Economics*, Vol. 90 No 4., pp. 629-650

iv. Principal agent problems / Moral Hazard:

- * MWG 477-501
- Wolfstetter Chapter 11
- Groves, Theodore, 1973 "Incentives in Teams," *Econometrica*, Vol. 41 No. 4, pp. 617-631.
- Grossman, Sanford J. and Oliver D. Hart, 1983 "An Analysis of the Principal-Agent Problem," *Econometrica*, Vol. 51, No. 1, pp 7-45

3. Auction Theory

- Wolfstetter Chapter 8, Gibbons 155-158

- * FT Chapter 6
- * Klemperer, Paul, 1999, "Auction Theory: A Guide To the Literature," *Journal of Economic Surveys*, Vol. 13 No. 3, pp. 227-285. (NOTE: pay special note to Appendices)
- * Milgrom, Paul R. and Robert J. Weber, 1982 "A Theory of Auctions and Competitive Bidding," *Econometrica*, Vol. 50 No. 5, pp. 1089-1122.
- * Vickrey, William, 1961 "Counterspeculation, Auctions, and Competitive Sealed Tenders," *Journal of Finance*, Vol. 16, pp. 8-37.
- McAfee, Preston R. and John McMillan, 1987 "Auctions and Bidding," *Journal of Economic Literature*, Vol. 25, pp. 669-738.
- Milgrom, Paul, 1989 "Auctions and Bidding: A Primer," *Journal of Economic Perspectives*, Vol. 3 No. 3, pp. 3-22.

4. Formal Mechanism Design

- * FT Chapter 7
- MWG Chapter 23
- * Maskin, Eric S, 2008 "Mechanism Design: How to Implement Social Goals," *American Economic Review*, Vol. 98 No. 3. pp. 567-576.
- * Hurwicz, Leonid, 2008 "But Who Will Guard the Guardians?," *American Economic Review*, Vol. 98 No. 3 pp. 577-585.
- * Myerson, Roger B., 2008 "Perspectives on Mechanism Design in Economic Theory," *American Economic Review*, Vol. 98 No. 3, pp. 586-603.
- Bulow, Jeremy and John Roberts, 1989 "The Simple Economics of Optimal Auctions," *Journal of Political Economy*, Vol. 97 No. 5, pp. 1060-1090.
- Myerson, Roger B, 1981 "Optimal Auction Design," *Mathematics of Operations Research*, Vol. 6 No. 1, pp. 58-73.

5. Voting Models and Social Choice Theory

- * MWG Chapter 21
- Ordeshook, Peter, 1986, *Game Theory and Political Theory*, Cambridge University Press, ISBN: 052131593.

6. An Introduction to Applied Mechanism Design

i. General Evaluation of Mechanisms

- * Cox, James C., Bruce Roberson and Vernon L Smith, 1982 "Theory and Behavior of Single Object Auctions," *Research in Experimental Economics*, Volume 2, pages 1-43
- Kagel, John H., Ronald M. Harstad and Dan Levin, 1987 "Information Impact and Allocation Rules in Auctions with Affiliated Private Values: A Laboratory Study," *Econometrica*, Vol. 55, No. 6 pp. 1275-1304.

ii. Design of Multiple Unit Auctions – Application to Spectrum Auctions

- * Plott, Charles R., 1997 "Laboratory Experimental Testbeds: Application to PCS Auction," *Journal of Economics & Management Strategy*, Volume 6, No. 3, pp. 605-638.

- Ledyard, John O., David Porter and Antonio Rangel, 1997, “Experiments Testing Multiobject Allocation Mechanisms,” *Journal of Economics & Management Strategy*, Volume 6, No. 3, pp. 639-.
 - Salant, David J., 1997 “Up in the Air: GTE’s Experience in the MTA Auction for Personal Communication Services Licenses,” *Journal of Economics & Management Strategy*, Volume 6, No. 3, pp. 549-572.
- iii. Design of Resource Allocation Mechanisms – Application to Space Station
- * Plott, Charles R. and David P. Porter, 1996 “Market Architectures and Institutional Testbedding: An Experiment with Space Station Pricing Policies,” *Journal of Economic Behavior & Organization*, Vol. 31, pp. 237-272.
 - * Ledyard, John, David Porter and Randii Wessen, 2000 “A Market-Based Mechanism for Allocating Space Shuttle Secondary Payload Priority,” *Experimental Economics*, Volume 2, pp 173-195.
- iv. Mechanisms for Information Aggregation
- * Forsythe, Robert, Forrest Nelson, George R Neumann and Jack Wright, 1992, “Anatomy of an Experimental Political Stock Market” *The American Economic Review*, Vol. 82, No. 5, pp. 1142-1161.
 - Forsythe, Robert, Thomas A. Rietz and Thomas W. Ross, 1999, “Wishes, Expectations and Actions: A Survey on Price Formation in Election Stock Markets,” *Journal of Economic Behavior and Organization*, Vol. 39, pp. 83-110.

HONOR CODE: Academic dishonesty as it relates to tests in this course will not be tolerated in any form. The Academic Honor system of the Florida State University is based on the premise that each student has the responsibility to:

1. Uphold the highest standards of academic integrity in the student's own work;
2. Refuse to tolerate violations of academic integrity;
3. Foster a high sense of integrity and social responsibility.

Put simply, cheating will not be tolerated. If an instance of academic dishonesty takes place, all students involved will receive a zero for that exam and the grade may not be dropped.

AMERICAN DISABILITIES ACT STATEMENT: Students with disabilities needing academic accommodations should:

1. Register with and provide documentation to the Student Disability Resource Center (SDRC);
2. Bring a letter to the instructor from SDRC indicating that you need academic accommodations. This should be done within the first week of class.