

Economics 9602B
Microeconomics II
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Winter 2013
TuTh 2-3:30, 4161 SSC
Office Hours: Thursday 3:30-5:30pm and by appointment, 4026 SSC

This is the second course of the core-sequence of the first-year PhD microeconomics. The aim is to go through the main ideas in game theory, which constitutes the mathematical foundation of economics as a science of interactive reasoning. Those ideas are about the formulation of games and the associated solution concepts. The course consists of lectures, recitations led by the TA, homework, and exams.

Textbooks

(All are excellent references, though my lectures will not follow the sequence of any textbook)

1. K. Binmore, Fun and Games: A Text on Game Theory. Heath & Company, 1992.
2. D. Fudenberg and J. Tirole, Game Theory. MIT Press, 1993.
3. G. Jehle and P. Reny, Advanced Microeconomic Theory. 2nd ed. Addison Wesley, 2000.
4. D. Luenberger, Optimization by Vector Space Methods. John Wiley & Sons, 1969. (Excellent mathematical perspective on constrained optimization.)
5. A. Mas-Colell, M. Whinston and J. Green, Microeconomic Theory. Oxford U Press, 1995.
6. R. Myerson, Game Theory: Analysis of Conflict. Harvard U Press, 1991.
7. M. Osborne and A. Rubinstein, A Course in Game Theory. MIT, 1994. (It is available online.)

Supplemental Reading List

(As time goes, I will add to this list some papers relevant to the course materials)

Coalitional games, the core, and matching theory:

- A. Abdulkadiroglu and T. Sonmez, "Matching markets: Theory and practice", 2011
<https://www2.bc.edu/~sonmezt/WorldCongressSurvey-June22-2011.pdf>
- F. Echenique and J. Oviedo, "A theory of stability in many-to-many matching markets", Theoretical Economics 1 (2006), 233-273
- S. Xiong and C. Zheng, "Core equivalence theorem with production", 23-35
J Econ Theory 137 (2007), 246-270

Winner's curse applied to political economy:

- T. Feddersen and W. Pesendorfer, "Convicting the innocent: The inferiority of unanimous jury verdicts under strategic voting", Amer. Poli. Sci. Rev. (Mar. 1998), v92, n1, 23-35

Tentative Schedule

(If a topic is not covered by most of the above-listed textbooks, a pointer is provided in the parenthesis next to that topic)

1. Saddle point (Jan. 15; Binmore)
2. Coalitional games and matching (Jan. 17; Osborne & Rubinstein; Myerson)
3. Dominance & rationalizability (Jan. 22)

4. Nash equilibrium (Jan. 24)
5. Student presentations/discussions of exercises (Jan. 29)
6. Asymmetric information
 - a. Rational expectations equilibrium (Jan. 31)
 - b. Bayesian Nash equilibrium (Jan. 31)
 - c. First-price auctions (Feb. 5, 7)
7. Winner's curse
 - a. Common value auctions (Feb. 5)
 - b. Convicting the innocent (Feb. 7)
8. Belief-free equilibrium (Feb. 12)
9. Student presentations/discussions of exercises (Feb. 12)
10. Correlated equilibrium (Feb. 14)
11. Subgame perfect equilibrium (Feb. 26)
12. Voting and binary agendas (Feb. 26)
13. Repeated games (Feb. 28)
14. Midterm exam 1 (Mar. 5, Tue.)
15. Discussion of Midterm Exam 1 (Mar. 7)
16. Extensive games with imperfect information (Mar. 12)
 - a. Sequential equilibrium
 - b. Perfect Bayesian equilibrium
17. Signaling games and the intuitive criterion (Mar. 13, Wed.)
 - a. Spence's model of education
 - b. Federal democracy as a signaling game
18. Two examples of mechanism design (Mar. 19)
 - a. Nonlinear pricing
 - b. VCG mechanisms
19. Foundation of mechanism design (Mar. 21)
 - a. Revelation principle
 - b. Envelope theorem
 - c. Payoff equivalence theorem
20. The Myerson-Satterthwaite theorem (Mar. 26)
21. Student presentations/discussions of exercises (Mar. 28)
22. Dynamic mechanism design (Apr. 2)
23. Midterm exam 2 (Apr. 4, Thur.)
24. Epistemology (Apr. 9)
25. Odds and ends (Apr. 11)

Assessment

The grade for this course is equal to the maximum of the following two items:

1. 50% Final + 20% Midterm 1 + 20% Midterm 2 + 10% Homework
2. 50% Final + 10% Midterm 1 + 30% Midterm 2 + 10% Homework

Homework

1. Students are encouraged to work in groups on homework problems. If you choose to do so, be sure to hand in only one copy of the homework and include the names of all the members of the group; every member of the group is assigned the same grade for the homework. Be sure to acknowledge anyone outside your group from whom your homework might have benefited.
2. If your homework has benefited from the work of others, be sure to cite it in your homework.
3. A homework problem is due a week from the day when it is assigned, unless announced otherwise.

Important

Rigor and clarity are important criteria in grading exams and homework in this course. Thus, the burden of proof is on the student to show that his/her work has reached the level of rigor and clarity to deserve the full or partial marks.