

Economics 200C: Games and Information
Spring 2002

Vincent Crawford
Economics 319, 534-3452

Economics 200C: Games and Information concludes the microeconomics core. It provides an introduction to noncooperative game theory, developing methods for analyzing how people make decisions when their consequences are influenced by other peoples' decisions, and showing how to use those methods to analyze strategic and informational questions in microeconomics.

The course will meet from 12:45 (promptly)-2:35 on Tuesdays and Thursdays in Economics Room 300, with the first class on Tuesday, April 2. My office hours will be 2:00-3:00 on Wednesdays in Economics 319, but you can also see me at other times, preferably by appointment. Other information will be announced and posted on the class web page at <http://weber.ucsd.edu/~vcrawfor/econ200C.htm>, also reachable through the Department's page: <http://www.econ.ucsd.edu/classes/>. An html version of my midterm and final exams from 1999-2001 is available on the class web page; this differs in unimportant ways from the original, printed versions, some of which are on reserve in the Department. There are no formal homework assignments, but it is strongly recommended that you do at least the textbook problems recommended at the end of each section of my lecture notes, also available on the course web page.

Students have two enrollment options. Those who just want to hear the lectures should enroll S/U; there will then be no formal requirements. Those who want a grade should enroll for one; their grades will be based on a midterm (40%) in class on Thursday, May 2; and a final (60%) during exam week. Except in exceptional circumstances, exams will be given only at the regularly scheduled times. If you are a student who wants to attend the lectures, please enroll one way or the other; enrollments are an important source of resources for the Department.

The lectures will mainly follow readings in Andreu Mas-Colell, Michael Whinston, and Jerry Green, *Microeconomic Theory*, Oxford 1995, the required text, and David Kreps, *A Course in Microeconomic Theory*, Princeton 1990. There are also useful readings in John McMillan, *Games, Strategies, and Managers*, Oxford 1992, and Hal Varian, *Microeconomic Analysis*, W. W. Norton 1992 (third edition). Those who want a good, unintimidating introduction to game theory may like Avinash Dixit and Susan Skeath, *Games of Strategy*, W. W. Norton 1999. Those who want to read more deeply in game theory should also consider: Ken Binmore, *Fun and Games*, Heath 1992; Drew Fudenberg and Jean Tirole, *Game Theory*, MIT 1991; David Kreps, *Game Theory and Economic Modelling*, Oxford 1990; and Thomas Schelling, *The Strategy of Conflict*, Harvard 1980. I have ordered some copies of Mas-Colell, Whinston, and Green and Kreps for the bookstore, and Dixit and Skeath is the required text for Economics 109, so should be available too.

Readings: The lectures will mainly follow:

Mas-Colell, Whinston, and Green, *Microeconomic Theory*, Oxford 1995 ("MWG" below)

Kreps, *A Course in Microeconomic Theory*, Princeton 1990 ("Kreps")

I have also listed some readings in:

McMillan, *Games, Strategies, and Managers*, Oxford 1992 ("McMillan")

Varian, *Microeconomic Analysis*, W. W. Norton 1992 (third edition) ("Varian")

I suggest that you do all the readings in MWG and Kreps below plus whatever else you find helpful. (Varian is helpful, but is not an adequate substitute for MWG and Kreps for our purposes.)

1. Introduction

2. Games with Simultaneous Moves ("Static Games")

MWG 235-253, 258-261, and 387-400; Kreps 387-417, 437-443, and 551-556; Varian 265-268

3. Games with Sequential Moves ("Dynamic Games")

MWG 267-282, 405-417, and 423-427; Kreps 401-402, 417-449, and 556-565; Varian 273-278

4. Infinite Horizon Games and Repeated Games

MWG 296-299, 400-405, and 417-423; Kreps 503-515, 524-526, and 551-565; Varian 269-271

5. Games with Asymmetric ("Incomplete") Information

MWG 253-257 and 282-296; Kreps 425-437 and 463-489; Varian 279-282

6. Adverse Selection

MWG 436-450; Kreps 625-629; Varian 466-469

George Akerlof, "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism,"
Quarterly Journal of Economics (August 1970)

7. Signaling and Screening

MWG 450-467; Kreps 629-652; Varian 469-471

Michael Spence, "Job Market Signalling," *Quarterly Journal of Economics* (August 1973)

Michael Rothschild and Joseph Stiglitz, "Equilibrium in Competitive Insurance Markets: An Essay
on the Economics of Imperfect Information," *Quarterly Journal of Economics* (November
1976)

8. Agency

MWG 477-506; Kreps 577-614 and 661-674; Varian 441-466; McMillan 91-129

9. Incentives and Mechanism Design

MWG 857-910; Kreps 661-703; McMillan 133-159

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Organization: The course will meet from 11:10 (promptly)-1:00 on Tuesdays and Thursdays in Economics Room 300, with the first class on Tuesday, April 3. My office hours will be 2:00-3:00 on Wednesdays in Economics 319, but you can also see me at other times, preferably by appointment. Students have two enrollment options. Those who just want to hear the lectures should enroll S/U; there will then be no formal requirements. Those who want a grade should enroll for one; their grades will be based on a midterm (40%) in class on Thursday, May 3; and a final (60%) during exam week. Except in exceptional circumstances, exams will be given only at the regularly scheduled times. Please enroll one way or the other. Other information will be announced and posted on the class web page at <http://weber.ucsd.edu/~vcrawfor/econ200C.htm>, also reachable through the Department's page: <http://weber.ucsd.edu/Depts/Econ/Classes/s01.html>. An html version of my midterm and final exams from 1999 and 2000 is available on the class web page; this differs in unimportant ways from the original, printed versions. There are no formal homework assignments, but it is strongly recommended that you do at least the textbook problems recommended at the end of each section of my lecture notes, also available on the course web page.

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Andreu Mas-Colell, Michael Whinston, and Jerry Green, *Microeconomic Theory*, Oxford 1995
("MWG" below)

David Kreps, *A Course in Microeconomic Theory*, Princeton 1990 ("Kreps")

I have also listed some readings in:

John McMillan, *Games, Strategies, and Managers*, Oxford 1992 ("McMillan")

Hal Varian, *Microeconomic Analysis*, W. W. Norton 1992 (third edition) ("Varian")

Avinash Dixit and Susan Skeath, *Games of Strategy*, W. W. Norton 1999 ("DS") is a good, unintimidating introduction to game theory. Those who want to read more deeply in game theory should also consider: Ken Binmore, *Fun and Games*, Heath 1992; Drew Fudenberg and Jean Tirole, *Game Theory*, MIT 1991; David Kreps, *Game Theory and Economic Modelling*, Oxford 1990; and Thomas Schelling, *The Strategy of Conflict*, Harvard 1980.

I have ordered some copies of MWG, Kreps, McMillan, Varian, and DS for the bookstore. I suggest that you do all the readings in MWG and Kreps below, plus whatever else you find helpful. (Varian is often helpful, but it is not an adequate substitute for MWG and Kreps for our purposes.)

1. Introduction

MWG 217-233; Kreps 355-384; Varian 259-265; McMillan 3-41

Robert Gibbons, "An Introduction to Applicable Game Theory," *Journal of Economic Perspectives* (Winter 1997), 127-149 (or you can substitute his book, *Game Theory for Applied Economists*, Princeton 1992)

2. Games with Simultaneous Moves ("Static Games")

MWG 235-253, 258-261, and 387-400; Kreps 387-417, 437-443, and 551-556; Varian 265-268

3. Games with Sequential Moves ("Dynamic Games")

MWG 267-282, 405-417, and 423-427; Kreps 401-402, 417-449, and 556-565; Varian 273-278

4. Infinite Horizon Games and Repeated Games

MWG 296-299, 400-405, and 417-423; Kreps 503-515, 524-526, and 551-565; Varian 269-271

5. Games with Asymmetric ("Incomplete") Information

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8. Agency

MWG 477-506; Kreps 577-614 and 661-674; Varian 441-466; McMillan 91-129

Oliver Hart and Bengt Holmstrom, "The Theory of Contracts," in Truman Bewley, editor, *Advances in Economic Theory, Fifth World Congress*, Cambridge 1987

9. Incentives and Mechanism Design

MWG 857-910; Kreps 661-703; McMillan 133-159