Joel Sobel
Spring 2009

Economics 200C: Games and Information

Objectives: Econ 200C is the final course in the micro core. It is a course on game theory and information economics.

Organization: The class meets TuTh from 8:00-9:50. I will teach the first half of the class. Vince Crawford will take over during the sixth week (May 5). My half of the class is an introduction to game theory. Check his website for material relevant to his portion of the class.

Texts:

- Binmore, *Fun and Games*

- Dixit and Skeath, *Games of Strategy*

- Fudenberg and Tirole, *Game Theory*

- Gibbons, *Game Theory for Applied Economists*

- Kreps, *A Course in Microeconomic Theory*

- Mas-Colell, Whinston, and Green, *Microeconomic Theory*

- McMillan, *Games, Strategies, and Managers*

- Osborne and Rubinstein, *Game Theory*

- Varian, *Microeconomic Analysis*

- Watson, *Strategy*

The list is in alphabetical order and is not comprehensive (talk to me for more suggestions).

You are familiar with Kreps, Mas-Colell, Whinston, and Green, and Varian. Between them, these texts cover the essential material of this course. Students who care only about completing this course and the micro qual need not go beyond the three of these books. If you used only one of these texts as a primary reference for 200A and B, then it will probably be adequate to continue to do so (although Varian's coverage of the topics in this course is somewhat thin). In my opinion Mas-Colell, Whinston, and Green supplies the best coverage of the material in the class.

Fudenberg and Tirole, Gibbons, and Osborne and Rubinstein are game theory texts. Fudenberg and Tirole is comprehensive and difficult. Gibbons's book is elementary and mechanical. [The article written by Gibbons ("An Introduction to Applicable Game Theory," *Journal of Econonomic Perspectives*, Winter 1997) is a good substitute for his text.] Osborne and Rubinstein is terse, somewhat philosophical, but closer in level to Fudenberg and Tirole than to Gibbons. I imagine that students who like Mas-Colell, Whinston, and Green will like Fudenberg and Tirole; students who like Varian will like Gibbons; and students who like Kreps will like Osborne and Rubinstein.

Binmore's book is, for the most part, mathematically elementary, but it is conceptually challenging. It contains topics that are not standard for an economics class. McMillan's book is a non-technical introduction

to strategic analysis. It contains some interesting commentaries. Dixit and Skeath and Watson are good upper-division undergraduate textbooks. These four books probably won't help you understand lectures, give insight into solving problems, or help you pass the qualifier, but they may provide general insight and appreciation of game theory and its applications.

What the Class is About: The first half of the class is an introduction to non-cooperative game theory. It contains many definitions and a few basic results.

How to Study: I recommend that you read the textbook coverage prior to the lecture. Doing so gives you a context in which to place the lecture material, it may generate questions to ask, and it should give you the confidence to listen to the lecture (rather than just write it down).

Leaving the classroom with a sense that you have understood the lecture is a weak sign that you understand the material. You must work problems. Do this seriously. Write down your answers with care. Talk about them with classmates, me, or the TA. Try to vary the assumptions in the main results of the class or in assigned problems. The most successful students should be able to write good problems (and answer them).

Requirements and Grading: Your grade for the course will be an equally weighted average of the grades assigned by Crawford (second half) and me (first half). I will base your grade on a midterm examination (80%) and homework (20%). Active (and positive) participation in class will serve to break ties (in your favor) when Vince and I aggregate grades. I encourage you to collaborate on homework assignments (but to write down your own answers). The final examination will be in class on Thursday, April 30. (If I need more time, there is a chance that the exam will be on Tuesday, May 5 instead.)

Office Hours: I encourage you to talk to me about course material. I propose to have office hours immediately after class. Other times are possible with advanced warning. David Eil (david.eil@gmail.com) will be the TA for the class. Sections: Mondays 1:30-3 (SH 231 on April 7, SH-244 thereafter). Office Hours: Thursdays 1-3 in SH-238.

Topics: Here is a tentative list of topics for the course. (If you are eager enough to follow Fudenberg and Tirole's book, then you should be able to identify the appropriate parts of the text.) Allow approximately two class meetings per topic.

Topic	Kreps	MWG	V	OR
Game Theory Basics	355–84	217–33	259–65	1–7
Static Games	387–416	235–53	265–8	11–63
Dynamic Games	417–49	267–82	273–8	89–113
Infinite Games	503–15; 556–65	298–9; 400–5	269–71	117–30; 133–59
Incomplete Information	463–89	253–7; 282–96	279–325	199–216; 219–253