Fall 2017

Economics 703: Microeconomic Theory II

The Theory of Strategic Behavior:
Game Theory and Mechanism Design

August 28, 2018

Instructor: George J. Mailath, McNeil 432, 898-7908 gmailath@econ.upenn.edu;
office hours: Mon and Wed, 4–5pm, or by appointment.

Teaching assistants:
Changhwa Lee: McNeil 552, changhwa@sas.upenn.edu, office hours: Friday 4-6pm.
Carlos Segura: McNeil 453. cseg@sas.upenn.edu, office hours: Thursday 5-7pm.

Class time and place: Tues and Thurs 10:30–12:00, McNeil 395.

Review sessions: Fridays 10-12noon, McNeil 286-7.

Rescheduled Classes: The review sessions on September 1 and November 10 will be used for class, and the class times on November 7 and 21 will be used for review sessions.

This is a graduate level introduction to game theory, information economics, and mechanism design. It is designed for first year Economics Ph.D. students, to be taken in conjunction with Economics 701.

Problem sets: Problem sets will be assigned every week. They are an important part of the course; you should spend a great deal of time and effort on them. You are encouraged to work in groups on the problem sets. However, before meeting in the group you should have attempted each question—groups work well when they allow you to learn from each other, they do *not* work well when they are used to facilitate a division of labor (you learn nothing from copying another student's answer; a similar comment applies to copying from previous years' solutions).

Canvas: This reading list, lecture notes, problem sets, and their solutions will be available on Canvas (http://upenn.instructure.com).

Grading and Exams: There will be one midterm exam (at 6–7p.m. on Oct 16, Stiteler B26) and a cumulative final exam after classes at the regularly scheduled time (Wednesday December 20, 9a.m.–11a.m.). Your grade will be based one third on the midterm and two thirds on the final.

Texts:

There will be distributed lecture notes.

The TEXT for the course is Mas-Colell, Whinston, and Green (1995). Mas-Colell, Whinston, and Green (1995) has been for many years the standard first year graduate micro text. While a little older (and perhaps a little idiosyncratic), Kreps (1990a) is another excellent first year graduate

micro text with extensive discussion of the strengths and weaknesses of game theoretic modeling. (Some of the best material from Kreps (1990a) is in Kreps (1990b).)

In addition, Jehle and Reny (2011) is a RECOMMENDED TEXT. If you decide to purchase this online, make sure you buy the **third edition**, which is significantly different and improved from the second edition.

Tentative Course Outline

The current course schedule with readings will be available on canvas.

1. Normal and Extensive Form Games

2. A First Look at Equilibrium

3. Games with Nature and Games of Incomplete Information

4. Existence of Nash Equilibrium

5. Dynamic Games, Sequential Rationality, Perfect Bayesian and Sequential Equilibria

6. Signaling

7. Repeated Games

8. Topics in Dynamic Games (Markov Perfect Equilibrium and the Coase conjecture)

9. Bargaining

10. Mechanism Design, Revelation Principle and Revenue Equivalence

11. Principal-Agent Settings with Hidden Action

References

JEHLE, G. A., AND P. J. RENY (2011): *Advanced Microeconomic Theory*. Pearson Education, third edn.

KREPS, D. M. (1990a): *A Course in Microeconomic Theory*. Princeton University Press, Princeton, NJ.

———— (1990b): *Game Theory and Economic Modelling*. Oxford University Press, Oxford.

MAS-COLELL, A., M. D. WHINSTON, AND J. GREEN (1995): *Microeconomic Theory*. Oxford University Press, New York, NY.