# ECON 7030: MICROECONOMIC THEORY 2

## Spring 2009

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Class Time: 3:30-4:45 on Tu/Th.
Office Hours: 2:00-3:00 on Tu/Th; additional office hours with appointment.

Course Description:  This is the second graduate course in microeconomic theory. It consists of two main parts. Part 1 is about noncooperative game theory. We shall study in this part the basic elements of games, static games of complete and incomplete information, and dynamic games of complete and incomplete information. This will lay down the foundation to our analysis of individual behavior and interactions in economic situations where there is strategic interdependence. In Part 2, we shall study market equilibrium and market imperfections. We shall start from the perfectly competitive market, and characterize its properties and welfare implications. The assumptions for the perfectly competitive market are then relaxed in several directions: the existence of externalities, the existence of market power, and the existence of imperfect information; and the market outcomes under each of these cases are analyzed. Applications of the theoretical developments will be discussed

Course Materials: The textbook is *Microeconomic Theory,* by Mas-Colell, Whinston, and Green. We intend to cover most materials in Parts II and III of the book. Some selected topics from other parts of the book may also be covered.

Grading: Grades are based on homework and class participation (10%), a midterm exam (40%); and a final exam (50%). You are encouraged to form study groups to discuss homework and lecture materials. Both exams will be in closed-book forms.

Problem Sets: There will be regular assignment of problem sets. Normally, you need to complete each problem set the following Tuesday from the time it is assigned and have it turned in to me. For each problem set, the TA will select randomly half of the students and grade their problem sets. A student's performance on problem sets will be calculated based on his (her) problem sets that are actually graded. However, if a problem set is not turned in on time, this problem set will receive a score of zero. For every other week, the TA will hold a recitation in which the problem sets are discussed. Additional sessions can be added if there is such a need.

Lecture Topics: Below is a tentative plan for the lectures. Changes to the plan will be announced in class during the semester, and you are responsible for updating the information.

Topic 1        Basics of Noncooperative Games
               Readings: Ch.7.
               Problem Set 1: 7.C.1, 7.D.1, 7.D.2, 7.E.1.
Topic 2        Simultaneous-Move Games under Complete Information
               Readings: Ch. 8: 8A-8D.
               Problem Set 2: 8.B.1, 8.B.2, 8.B.6, 8.B.7, 8.D.2, 8.D.4, 8.D.5.
Topic 3        Simultaneous-Move Games under Incomplete Information
               Readings: Ch. 8: 8E-8F.
               Problem Set 3: 8.D.6, 8.E.2, 8.E.3.
Topic 4        Dynamic Games under Complete Information
               Readings: Ch. 9: 9A-9B
               Problem Set 4: 9.B.2, 9.B.9, 9.B.10, 9.B.11.
Topic 5        Dynamic Games under Incomplete Information
               Readings: Ch. 9: 9C-9D
               Problem Set 5: 9.C.2, 9.C.7.

Topic 6          Competitive Markets: Concepts and Partial Equilibrium Analysis
                 Readings: Ch. 10: 10A-10C.
                 Problem Set 6: 10.C.1, 10.C.2, 10.C.4, 10.C.9, 10.C.10.
Midterm Exam
Topic 7          The Fundamental Welfare Theorems in A Partial Equilibrium Context and Long-Run
Competitive Equilibrium
                 Readings: Ch. 10: 10D-10F.
                 Problem Set 7: 10.D.2, 10.D.4, 10.F.2, 10.F.6.
Topic 8          Externalities and Public Goods
                 Readings: Ch. 11.
                 Problem Set 8: 11.B.3, 11.B.4, 11.B.5, 11.C.1, 11.D.1, 11.D.6.
Topic 9          Market Power: Static Models of Monopoly and Oligopoly
                 Readings: Ch. 12: 12A-12C.
                 Problem Set 9: 12.B.4, 12.B.5, 12.B.9, 12.C.3, 12.C.9.
Topic 10         Dynamic Models of Imperfect Competition and Entry
                 Readings: Ch. 12: 12D-12E.
                 Problem Set 10: 12.C.18, 12 D.2., 12 E.4., 12 E.7.
Topic 11         Adverse Selection, Signaling, and Screening
                 Readings: Ch. 13
                 Problem Set 11:13.B.2, 13.B.4, 13.C.1, 13.C.5.
Final Exam
*Students with disabilities who may need academic accommodations should
discuss options with me during the first two weeks of class.