ECON 7013 - Microeconomic Theory II

Spring 2016

Basic Information

Instructor: Byung-Cheol Kim (byung-cheol.kim@econ.gatech.edu)
Office: Old CE room 324
Class: **09:35 AM – 10:55 AM Tu/Th, Architecture (West) 250**
Office Hours: Tuesday 3:00-5:00 PM

Description

This course is the second sequel to Microeconomic Theory series. This course intends to provide graduate students with solid background in applied microeconomic theory. In particular, we will study game theory and its applications in various contexts to enable students to understand and build theoretical frameworks for their thesis in the applied fields of economics and related disciplines. In addition, we will study basic theory of mechanism design problems.

Textbooks

We will use following three books for this course as required references.

1. Mas-Corell, Whinston and Green, Microeconomic Theory, Oxford University Press, New York, 1995. (MWG)

2. Robert Gibbons, Game Theory for Applied Economists, Princeton University Press, 1992. (G)

3. Jean-Jacques Laffont, David Martimort, The Theory of Incentives: The Principal-Agent Model, Princeton University Press, 2001. (LM)

Web Site

You are supposed to check the course web page, http://t-square.gatech.edu, at least once a week, for all important announcements and course materials.

Grade

Course grades will be based on Problem Sets (10%), Midterm I (25%), Midterm II (25%), and Final exam (40%). Final exam is partially cumulative in the sense that two questions are from Midterm I and Midterm II coverage, one for each.

Topics

Below are *tentative* topics to be discussed in class; note that it may be subject to some changes.

1. Game Theory Part I: Introduction and Analyzing Static Games
    A. Basics (MWG 7, G1)
        i. Meaning, Description, Representation
        ii. Information set, Strategies, Normal Form
        iii. Beliefs, Mixed Strategies, Expected Payoffs
        iv. Best Response, Dominance
    B. Static Games of Complete Information (MWG 8, G1)
        i. Nash Equilibrium
        ii. Applications
            1. Oligopoly models (Cournot, Bertrand)
            2. Median voter theorem
            3. Others
    C. Static Games of Incomplete Information (MWG 8.E, G3)
        i. Bayesian Nash Equilibrium
        ii. Applications
            1. Prisoners' dilemma of incomplete information
            2. Cournot duopoly of incomplete information
            3. Various auctions
            4. Others

Midterm Exam I

2. Game Theory Part II: Dynamic Games
    A. Dynamic Games of Complete Information (MWG 9.A-B, G2)
        i. Subgame, Backward Induction, and Subgame Perfection
        ii. Two-stage games
        iii. Applications
            1. Durable good problem and planned obsolescence
            2. Bargaining
                a. Standard bargaining model
                b. Joint decisions and a negotiation equilibrium
            3. Others
        iv. Repeated Games and Folk Theorem
        v. Applications
            1. Efficiency wages
            2. Time-consistent monetary policy

    B. Dynamic Games of Incomplete Information (MWG 9.C-D and 13, G4)
        i. Sequential Rationality, Forward Induction
        ii. Perfect Bayesian Equilibrium (Pooling / Separating PBE)
        iii. Job Market Signaling
        iv. Screening
        v. Applications
            1. Corporate investment and capital structure
            2. Sequential bargaining under asymmetric information

Midterm Exam II

3. The Principal-Agent Problem (MWG 13-14, LM 2-5)
    A. Adverse Selection, Hidden Information (Monopolistic Screening)
        i. Discrete type
        ii. Continuous type
        iii. Applications
            1. Regulation
            2. Collateral as a screening device in loan markets
            3. Credit Rationing
            4. Others
    B. Hidden Action (Moral Hazard)
        i. Two effort, Two outcome
        ii. Continuum of choices
        iii. Extensions and Applications

Final Exam