ECN 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.


**Web Site**
You are supposed to check the course web page, [http://t-square.gatech.edu](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