Course Syllabus

ECO4078: Economics of Information and Uncertainty

Spring 2019

Instructors

- ☐ **First Half:** Youngwoo Koh
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  - Office Hours: Monday 2:00-3:00pm / 709 Economics & Finance Bldg.
- ☐ **Second Half:** In-Koo Cho
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  - Office: 702 Economics & Finance Bldg.

Class Day/Time: Tuesday, Wednesday 1:00-2:30pm (H17-404)

Course website: portal course community

Teaching Assistant: Woojin Kim / woojin7687@hanyang.ac.kr

Course Description and Objectives:

The objective of this course is to explore implications of interactions among rational players. The course will be two folded. In the first half of the course, we will study (i) economic agents' choice problems under uncertainty (expected utility, risk aversion and contingent commodity markets), (ii) hidden information problems (screening problems) with applications of price discrimination and regulations, and (iii) hidden action problems (moral hazard problems) with applications of insurance markets and contracts. In the second half of the course, we will discuss various issues in game theory focusing on (i) extensive form games and their applications (including ultimate game, repeated prisoners' dilemma, dynamic monopoly), (ii) Bayesian games and their applications. Students are expected to have knowledge of intermediate microeconomics and game theory (at the level of the standard intermediate microeconomics course).

Textbook: Osborne, Martin J., *An Introduction to Game Theory,* 6th Edition, Oxford University Press.

Prerequisite: Intermediate microeconomics, Game theory and its applications

Course Outline:

- **First Half**
  1. Choice under Uncertainty
     - Expected Utility, Risk Aversion, Contingent Commodity Market.
  2. Hidden Information: Screening
     - Price Discrimination, Regulation
  3. Hidden Action: Moral Hazard
     - Introductory Model, Extensions
- **Second Half**
  1. Extensive Form Game with Complete Information
  2. Nash Bargaining and Strategic Bargaining
  3. Applications of Extensive Form Game
     - Ultimate Game, Centipede Game, Repeated Prisoners' Dilemma, Dynamic Monopoly
  4. Incomplete Information and Bayesian Game
  5. Auction

Grading and Evaluation:

Attendance (5%), Problem sets (10%), Midterm Exam (40%), Final Exam (45%)

Administrative Details:

1. Attendance will be checked occasionally. Being late will be counted as absence.
2. Problem sets will be occasionally assigned. You must turn in individual work. Direct copying is not permitted and will be treated as cheating. Late problem sets will not be accepted.
3. The midterm and final exams will take place in-class
4. Do not use cell phone in the class. Please turn it off before class begins.