A Course on Game Theory and Information Economics

August 30 - September 3, 2021

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Course Outline

The course provides a short introduction to game theory and to the field known as "information economics." Topics covered include normal and extensive form games, with complete and incomplete information, as well as more advanced topics such as sequential rationality, auctions, revenue equivalence, the winner's curse, mechanism and information design, and reputation. Many examples, both abstract and more applied will be presented.

Please note that the course will start on **Sunday, August 29**, in the evening with a welcome meeting at 19:00 followed by dinner.

The **Final Examination** will take place on **Monday, September 27, 2021**.

Prerequisites The course is self contained. Basic knowledge of probability and calculus is assumed.

Tentative Lecture Plan

Sunday (29/8)   Brief Introduction
19:00-19:30 Brief Introduction
19:30-   Dinner

Monday (30/8)   Strategic Form Games
7:00-9:30 Breakfast
9:30-10:45 *Lecture* 1: *Dominant Strategies*
10:45-11:00 Coffee break
11:00-12:15 *Lecture* 2: *Successive Elimination of Strictly Dominated Strategies*
12:15-14:00 Lunch
14:00-15:15 *Lecture* 3: *Nash Equilibrium*
15:15-15:45 Coffee break
15:45-17:00 *Lecture* 4: *Existence of Nash Equilibrium*
17:00-19:00 Free time
19:00-   Dinner

Tuesday (31/8)   Extensive Form Games
7:00-9:30 Breakfast
9:30-10:45 *Lecture* 5: *Backwards Induction*
10:45-11:00 Coffee break
11:00-12:15 *Lecture* 6: *Subgame Perfect Equilibrium*

12:15-14:00 Lunch
14:00-15:15 *Lecture 7: Rubinstein's Model of Alternating Offer Bargaining*
15:15-15:45 Coffee break
15:45-17:00 *Lecture 8: Repeated Games*
17:00-19:00 Free time
19:00-   Dinner

Wednesday (1/9)   Games with Incomplete Information
7:00-9:30 Breakfast
9:30-10:45 *Lecture 9: Sequential Rationality*
10:45-11:00 Coffee break
11:00-12:15 *Lecture 10: Bayesian Games*
12:15-14:00 Lunch
14:00-15:15 *Lecture 11: Auctions with Private Values 1*
15:15-15:45 Coffee break
15:45-17:00 *Lecture 12: Auctions with Private Values 2*
17:00-19:00 Free time
19:00-   Dinner

Thursday (2/9)   Auctions, Mechanism Design, and Information Design
7:00-9:30 Breakfast
9:30-10:45 *Lecture 13: Revenue Equivalence*
10:45-11:00 Coffee break
11:00-12:15 *Lecture 14: The Winner's Curse*
12:15-14:00 Lunch
14:00-15:15 *Lecture 15: Mechanism Design*
15:15-15:45 Coffee break
15:45-17:00 *Lecture 16: Information Design*
17:00-19:00 Free time
19:00-   Dinner

Friday (3/9)   Reputation
7:00-9:30 Breakfast
9:30-10:45 *Lecture 17: Good Reputation*
10:45-11:00 Coffee break
11:00-12:15 *Lecture 18: Bad Reputation*
12:15-14:00 Lunch