Course Description

A focus on the strategic interaction between several decision makers. Topics include: optimal decisions of firms interacting in markets with imperfect competition, the value of information under strategic conflict, optimal bidding strategies for various auction mechanisms (including online auctions), optimal network design, incentives, cyber attacks, matching and others.

Course Goals

Week 1

Introduction
Three Door Problem
Medical Diagnosis

**Week 2**

Dominant strategies

- A Couple Dispute
- The Prisoner's dilemma
- Split or Steal

**Week 3**

Strategic dominance relationship

- Collapse of Cartel
- Is more is better?
- Strategic coting in the board of directors
- Successive Elimination of dominated strategies

**Week 4**

Strategic equilibrium (Nash Equilibrium)

**Week 5-6**

Traffic equilibrium and its application to network design

**Week 7-8**

Bids and Auctions

- Tender Offers
- Mergers and acquisition with asymmetric information
- First, Second and Third price auctions, English and Dutch Auctions
- The winner's curse

**Week 9-10**

Dynamic Games

- Games in tree form
- Backward Induction
- Dollar Auction
- Centipede Game
- Simultaneous and Sequential Games
Week 11-12

Mixed Strategy Matching

- Stable matches in two-sided markets (awarded a Noble Prize to A. Roth and L. Shapley in 2012)
- Applications to Kidney exchange

Week 13

Sample Problems

Grading

In this course, you will be assessed on the following: Final Exam - 100%

Grade is based only on the performance in the final Exam. The exam consists of Multiple Choices problems and with open material.

Additional Notes

This course is in person. Most of this course is recorded. You can find the YouTube Link to all lectures here: https://www.youtube.com/playlist?list=PL7-jjKPr84B8vwyprhJXP_1uU7owrrKwb

Reading List

In addition to the power point presentations, Selected problems from New Problem Set and from the file of Previous Exams that well reflects the difficulty level of the course. Full solutions to all these problems are provided.


None of the books above is a requirement. The second book of Dixit and Nalebuff is highly recommended. All books can be found in Amazon.com.