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
- Marger 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

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**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.

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**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-jjKPr84B8vyprhJXP_1uU7owrrKwb

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**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.