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

Strategic Thinking Introduction
Three Door Problem
Medical Diagnosis
Dominant strategies

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

**Week 2**

Strategic dominance

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

**Week 3**

Strategic equilibrium (Nash Equilibrium)

- Nash Equilibrium Examples

**Week 4**

Traffic equilibrium and its application to network design

**Week 5**

Location Games
Location Games and Applications to Voting

**Week 6-8**

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

**Week 9**

Incentives

**Week 10-12**

Dynamic Games

- Games in tree form
- Backward Induction
- Dollar Auction
- Centipede Game
- Simultaneous and Sequential Games
- Mixed Strategy and Cyber Attacks

**Week 13**

**Matching**

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

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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](https://www.youtube.com/playlist?list=PL7-jjKPr84B8vyprhJXP_1uU7owrrKwb)

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**Reading List**

In addition to the power point presentations, and Problems Set with Solutions.
The Following books are helpful


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.