Game Theory in Economics (Fall, 2015)

Professor and TA:

Instructor: Mehmet Ekmekci, Associate Professor of Economics, Boston College, ekmekci@bc.edu

TA: Gian Caspari, casparig@bc.edu

Location and Time: Tuesday and Thursdays, Gasson Hall 306.

Office hours: Tuesday 1:30-3 pm, Maloney Hall 318

Your TA, Gian will hold regular office hours:

Monday and Wednesday 9:15- 10:15 am, Maloney Hall, 3rd floor, graduate lounge.

Description:

This course is an introduction to game theory and strategic thinking. Ideas such as dominance, backward induction, Nash equilibrium, evolutionary stability, commitment, credibility, asymmetric information are discussed and applied to games played in class and to examples drawn from economics, politics, the movies, and elsewhere.

Texts:


Open Yale courses: ECON 159: Game theory: http://oyc.yale.edu/economics/econ-159


Requirements:

Who should take this course?
This course is an introduction to game theory. We will use calculus (mostly one variable) in this course. We will also refer to ideas like probability and expectation.

Course Aims and Methods.
Game theory is a way of thinking about strategic situations. One aim of the course is to teach you some strategic considerations to take into account making your choices. A second aim is to predict how other people or organizations behave when they are in strategic settings. We will see that these aims are closely related. We will learn new concepts, methods and terminology. A third aim is to apply these tools to settings from economics and from elsewhere. The course will emphasize examples. We will also play several games in class.
Grading:

Problem sets: 30% (6 to 8 individual problem sets)
Midterm examination: 30%
Final examination: 40%

Outline and Reading.

This is a rough guideline of the topics and readings that we will cover. Topics and order may change.

Part 1: In the first half of the class we will focus on the basics of game theory: We will cover only Simulatenous-move games in this part. Midterm will be at the end of Part 1 (around early-mid October)

- Representation of a strategic situation as a game matrix.
- Pure strategy dominance.
- Iterated Deletion of dominated strategies.
- Best Replies.
- Nash Equilibrium.
- Games with continuous strategies.
- Mixed strategies.

Dixit, Skeath and Reiley chapters 4, 5 and 7.

Watson, chapters 3 (page 28-30), 4, 5, 6, 7, 8, 9, 10, 11.

Dutta, chapters 3, 4, 5, 6, 8, 9

Part 2: In this part we will add dynamics, order of moves, and repetition to the theory of games. Some of the topics we will cover are:

- Sequential Moves.
- Extensive-form and tree representation.
- Backward Induction.
- Subgame Perfection.
- Bargaining.
- Repeated games.
- In class experiments.

Dixit, Skeath and Reiley chapters 3, 6, 9, 10, 15, 16, 17.

Watson, chapters 2, 14, 15, 18-19, 11, 23.

Dutta, Part 3.