EC 308.01 – GAME THEORY IN ECONOMICS

Fall 2014

Department of Economics, Boston College

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Game Theory in Economics  Maloney Hall, 314
Fall 2014  turhan@bc.edu
MWF 10:00 AM  Office Hours: MW 2-3 pm
Campion 200

Course Description

Game Theory is one of the most successful intellectual developments of the twentieth century, providing a methodology for analysis of strategic situations that has been applied in various disciplines including economics, political science, international relations, biology and computer science.

Game Theory is the systematic study of decision-making in situations where a decision maker must understand the decisions of others in order to make the best decision for himself. The interdependence of outcomes leads to strategic considerations and the Game Theory offers a framework to formulate the interactive situation, analyze the strategic problem, and predict the outcome of the problem.

In this course, we will learn how to model real-life situations of strategy as a formal game and how to analyze the behavior of rational agents in such a game. Applications of Game Theory, to economic and other problems, will be emphasized over the development of the formal theory.

Prerequisites

It is absolutely necessary that the enrolled student has completed a course in Calculus (eg. MT 100) and Microeconomic Theory (EC 201). Any student unsure of his or her preparation should consult with the instructor at the beginning of the course.
Course Materials

The required textbook for the class is “Strategy: An Introduction to Game Theory” by Joel Watson (Third edition) which is available in BC bookstore.

In some lectures I will cover material, which is not in the book, and I will provide you my own notes for those lectures.

I will also use another book “Games of Strategies” by Avinash Dixit, Susan Skeath and David H. Reiley (Third edition). This book is written in an easier way for the starters.

Course Requirements and Grading

Your score for this course will be based on one midterm (30%) and one final exam (40%), and problem sets and quizzes (30%). Your grade for the course will be based on your score, with minor favorable adjustments made on the basis of your level of class participation and discussion. While I reserve the right to alter the date of the midterm exam, you should plan to take it on October 10th.

All exams will be in-class exams. The final exam will be comprehensive, but will focus on the most recently taught material. There are NO make-up exams. Do not miss either exam; you will receive a zero for it if you do.

Academic Integrity

You are encouraged to work together to understand the lectures and the material in the textbook. However, you must work on the problem sets by yourself, and all homework must be your own. Of course, you may not work together on any exams. Please familiarize yourself with the “Academic Integrity” section of the Boston College Catalog (35-36) or online at http://www.bc.edu/integrity.

Accommodations for Disability

If you have a disability and will be requesting accommodations for this purpose, please register with either Kathy Duggan (Kathleen.duggan@bc.edu), Associate Director, Academic Support Services, the Connors Family Learning Center (learning disabilities and ADHD) or Suzy Conway (suzy.conway@bc.edu), Assistant Dean for Students with Disabilities (all other disabilities). Advanced notice and appropriate documentation are required for accommodations.
Course Topics

- Math Review for Game Theory
- Individual Choice and Properties of Choice Functions
- Modeling Strategic Situations
- Normal-Form Games: Dominance Solvability
- Normal-Form Games: Nash Equilibrium in Pure Strategies
- Normal-Form Games: Nash Equilibrium in Mixed Strategies
- Normal-Form Games: Continuous Strategies
- Sequential Games: Backward Induction and Sub-game Perfection
- Repeated Games
- Games with Private or Asymmetric Information
- Bargaining
- Matching and Mechanism Design