

ECON 106G
Introduction to Game Theory
SUMMER 2017

Instructor: Byeong-hyeon Jeong

Time and Location: Tuesday, Thursday 10:45am-12:50pm, Fowler A103B

Contact: bh.jeong1985@gmail.com

Office Hours: TBA

Overview and Objectives

Game theory is a useful tool in analyzing and predicting economic agents' decision making when decisions of each agent can affect each others. Main goal of the course is to introduce the basic solution concepts of game theory: dominant strategies, rationalizability, Nash equilibrium, sub-game perfect equilibrium, Bayesian Nash equilibrium, perfect Bayesian equilibrium. Various examples of each solution concept will be provided in class. The students are expected to be able to apply theory to real life situations through homework assignments and exams.

Requirements

In this class we will use basic calculus and probability theory. Econ 101 is a prerequisite for this course.

Required Texts

Required: Joel Watson: Strategy: An Introduction to Game Theory 3rd Edition

All practice problems (not graded) and some homework problems will come from this textbook. It is available at the student store.

Grading

There will be a midterm, which will be 30% of your total score, and the final will make up the remaining 70%.

Course Outline

Week 1

Introduction to game theory, Components of a game, Rationality, Expected payoffs, Strategies, Game Forms, Dominance, Weak dominance. (Watson Ch 1-6)

Week 2

Best responses, Rationalizability, Nash equilibrium, Mixed strategies (Watson 7, 9-11)

Week 3

Dynamic games, Subgame perfect Nash equilibrium, Repeated games (Watson 14,15,18,19)

Week 4

Oligopoly, Collusion, Cooperative Games, CORE (Watson 20-23)

Week 5

Incomplete information, Imperfect information, Bayesian Nash equilibrium (Watson 24, 26-29)

Week 6

Perfect Bayesian equilibrium, Moral Hazard, Signaling, Adverse Selection