

Economics 200f: Game Theory

Joel Watson, Fall 2004

This is a straightforward course in advanced game theory. We will review some of the standard models, techniques, and results. We will also discuss some recent advances and applications, emphasizing new directions in and applications of game-theoretic models of contract. For reference, students are encouraged to read from the following textbooks:

Fudenberg and Tirole, <i>Game Theory</i> ,	Kreps, <i>A Course in Microeconomic Theory</i> ,
Kreps, <i>Game Theory and Economic Modelling</i> ,	Myerson, <i>Game Theory: Analysis of Conflict</i> ,
Osborne and Rubinstein, <i>A Course in Game Theory</i> ,	Watson, <i>Strategy: An Intro. to Game Theory</i> .

We will also read some standard and recent journal articles and working papers. Hopefully, the course will stimulate the students' interest in cutting-edge research, both applied and abstract.

Preliminary outline

1. Basic noncooperative representations: extensive and normal forms
2. Analysis of static games
 - a. Basic decision theory, best response, dominance
 - b. Rationalizability,
 - c. Congruence, Nash equilibrium
 - d. Contract and enforcement, static implementation
 - e. Bayesian games and topics
3. Dynamic games — complete information
 - a. Conditioning events/probability/dominance, sequential rationality, rationalizability
 - b. Backward induction, subgame perfection
 - c. Topics: repeated games, bargaining, Nash bargaining solution, applications
4. Dynamic games — incomplete information
 - a. Perfect Bayesian equilibrium and other refinements
 - b. Applications: reputation, bargaining, signaling, contracting
5. Contract theory — settings of complete information
 - a. Mechanism design theory
 - b. Modeling contract and renegotiation using mechanism design
 - c. Game theory foundation; joint decisions, regimes
 - d. Topics