

Game Theory (Fall 2011)

Course Outline

Instructor: Diana MacDonald

Textbooks:

- “An Introduction to Game Theory” by Martin Osborne
- “The Art of Strategy: A Game Theorist’s Guide to Success in Business and Life” by Avinash K. Dixit and Barry J. Nalebuf

Part I: Static Games with Perfect Information

- Strategic Form Games
- Dominated Strategies and Elimination of Dominated Strategies
- Best Response and Nash Equilibrium
- Applications: Cournot’s and Bertrand’s Models of Oligopoly

Part II: Dynamic Games with Perfect Information

- Extensive Form Games
- Strategic Form Representation of Extensive Form Games
- Backward Induction and Subgame Perfect Nash Equilibrium
- Applications: Stackelberg’s Model of Oligopoly, Bargaining, Strategic Moves and Credibility

Part III: Repeated Games

- Finite and Infinite Games
- Trigger Strategy
- Folk Theorem
- Applications: Collusion

Part IV: Static Games with Imperfect Information

- Incomplete Information
- Bayesian Games and Bayesian Equilibrium
- Applications: Cournot's with Imperfect Information, Moral Hazard and Adverse Selection

Part V: Dynamic Games with Imperfect Information

- Beliefs and Sequential Equilibrium
- Signaling Games
- Applications: Education as Signal of Ability