

## Game Theory (Fall 2021) Course Outline

**Instructor:** Diana MacDonald

**Textbooks:**

- “An Introduction to Game Theory” by Martin Osborne
- “Game Theory for Applied Economists” by R. Gibbons
- “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