

## Polisci 153Z: Thinking Strategically

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TTh 3-4:30pm. OH: Tuesdays 1:30-2:30, Encina Hall West #411.

**Course description:** This is an introduction to basic concepts in game theory and strategic reasoning. We discuss ideas such as commitment, credibility, adverse selection, moral hazard, signaling and reputation. Concepts are developed through games played in class, as well as through applications to politics, economics, business and everyday life.

**Aims:** Taking game theory might help you make better life decisions, but this would be an *unintended* consequence of this course. My aim is to provide you with some tools to analyze situations where you might expect firms, countries, political parties and regular people to behave “strategically.”

The point of this course is to get in depth about what game theorists mean when they say that the players of a game behave “strategically.” In addition to providing the tools for you to better analyze strategic situations, another important aim of the course is to expose you to the limitations of strategic reasoning as well.

**Requirements:** There are no requirements for this course, but we will use high school level algebra and geometry regularly. We will also use concepts like probability and expected value. If you have already taken a game theory course in the economics department (like Econ 160 or 180 at Stanford or a similar course elsewhere), then you should not take this course. This is a course meant for students who have never taken game theory before. Students with a strong math background and interest in political science applications of game theory should consider taking the more advanced courses, Polisci 356a/b in the regular terms, if those are being offered.

**Books:** I will actually not follow a textbook for this course. Instead, I will post handouts as we go along. But if you would like to follow a game theory text book, I recommend Osborne (see below). Dixit and Nalebuff is a fun read, but is also not required.

- Martin Osborne. *Introduction to Game Theory*, Oxford 2003.
- Avinash Dixit and Barry Nalebuff. *Thinking Strategically*, Norton 1991.

**Grading:** I don't accept late homework, except with a valid excuse (e.g. doctor's note). You may work with others on the homework, but you must submit your own answers.

- Six problem sets. (50%)
- One in-class midterm. July 19, 2022. (20%)
- Final exam. Time and Location Determined by Registrar's Office. (30%)

**Course Outline:** Here is a list of topics that we'll cover. We will go roughly in order. We may not have time to cover all of the topics.

- I. Games, Strategies, and Bad Strategies**  
Osborne Ch. 1.
- II. Cooperation, Competition and Coordination**  
Selections from Osborne Ch. 2, 3, 4.
- III. Credibility and Commitment**  
Selections from Osborne Ch. 5, 6, 7.
- IV. Bargaining**  
Selections from Osborne Ch. 16.
- V. Long Term Relationships: Cheating and Punishing**  
Selections from Osborne Ch. 14, 15
- VI. Uncertain Motivations**  
Selections from Osborne Ch. 9.
- VII. Moral Hazard and Adverse Selection**  
Selections from Osborne Ch. 10
- VIII. Deception**  
Selections from Osborne Ch. 10
- IX. Signaling and Reputation**  
Selections from Osborne Ch. 10