

Political Science 835: Game Theory and Political Analysis

Andrew H. Kydd
Department of Political Science
University of Wisconsin-Madison

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Course Information

Class Time: Monday, 1:20-3:15 pm
Class Location: 422 North Hall
Section Time: Friday, 1:20-2:10pm
Section Location: 216 Ingraham Hall

Professor: Andrew Kydd
E-mail: kydd@wisc.edu
Phone: 608-263-2024
Office: 415 North Hall
Office Hours: Wednesdays 1-3

Teaching Assistant: Priyadarshi Amar
E-mail: pamar@wisc.edu
Phone: (608) 440 4657
Office: TA Office in North Hall
Office Hours: Tuesday 9:30-11.30am

Course Description

This course is an introduction to game theory in political science. The focus will be on learning the methodology, but applications from American politics, comparative politics, political theory and international relations will be examined throughout the course, reflecting the prevalence of similar strategic issues across subfields.

Course Requirements

There will be weekly problem sets, a midterm and a final exam, the breakdown is as follows.

Problem Sets	30%
Midterm Exam	30%
Final Exam	40%
Total	100%

Textbooks

There are two textbooks for the course.

- Osborne, Martin J. 2004. *An Introduction to Game Theory*. Oxford University Press. (Hereinafter O)
- McCarty, Nolan and Adam Meirowitz. 2007. *Political Game Theory: An Introduction*. Cambridge University Press. (Hereinafter MM)

Learning outcomes

By the end of the semester, you should be able to:

- Understand how individual preferences are aggregated into group preferences through voting and similar mechanisms
- Analyze strategic and extensive games of perfect and imperfect information
- Identify the game theoretic foundations of strategic arguments made informally
- Read and understand many formal-theory articles

Problem Sets

Problem sets will be distributed in class and due before the next class. The TA will go over the problem sets from the previous week. Working on the problems is very important, one cannot learn game theory without doing problems. Do not be tempted into easing back for a problem set or two, with the thought that you can catch up before the exam. This material is like a train: if you get off at one station, you will find it very difficult to get back on at the next. Do work in groups, but ideally only after you have already attempted to solve the problems on your own; the final writeup should be your own. Please see me and your teaching assistant when you have questions.

Although there is no formal participation grade, attendance in discussion section is required. Among other benefits, this is where you will learn many of the tricks used to solve problems.

Schedule: Spring Semester 2020

Class	Date	Topic	Readings
1	Jan. 27	Normal Form Games 1	O Ch. 1, 2
2	Feb. 3	Normal Form Games 2	O Ch. 3
3	Feb. 10	Mixed Strategies	O Ch. 4
4	Feb. 17	Extensive Form Games 1	O Ch. 5
5	Feb. 24	Extensive Form Games 2	O Ch. 6, 7
6	Mar. 2	Incomplete Information I	O Ch. 9
7	Mar. 9	Incomplete Information II	O Ch. 10
	Mar. 16	Spring Break	
	Mar. 23	Midterm Exam	
8	Mar. 30	Evolutionary Game Theory	O Ch. 13
9	Apr. 6	Repeated Games	O Ch. 14, 15
10	Apr. 13	Utility Theory	MM pp. 21-62
11	Apr. 20	Social Choice Theory	MM Ch. 4
12	Apr. 27	Final Exam	