

POLITICAL SCIENCE 506: THEORIES OF INDIVIDUAL AND COLLECTIVE CHOICE II

Washington University
Department of Political Science
Spring 2023
Monday 8AM-9:50AM
Seigle 205

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Office Hours: by appointment
Seigle 241

This is the second course in the game theory sequence for political science doctoral students. The goals of the course are two-fold. First, the course will build on students' existing knowledge of game theory by teaching additional tools and concepts not covered in the first-semester game theory course. Second, the course will help students make the transition from consumers to producers of theoretical models by teaching applications in political science and having students produce an original theoretical model.

I do not ask you to buy a textbook for this course. I will mix and match readings from various sources and provide most textbook readings from Canvas. For your own reference some advanced texts I recommend are Osborne and Rubinstein's *A Course in Game Theory*. Other good choices for advanced references on game theory include Fudenberg and Tirole's *Game Theory* and Myerson's *Game Theory: Analysis of Conflict*. I like all three books for different reasons but one thing to note is that Osborne and Rubinstein's book is **available for free online**. As in the first course, *Game Theory: An Introduction* by Steven Tadelis is also useful, as is McCarty and Meirowitz's *Political Game Theory*. We will not focus on working through any textbook so I recommend these mainly as a reference for concepts throughout the course.

I assume that students have a working knowledge of algebra, elementary calculus, and basic probability theory. Political Science 5052 or a comparable course is sufficient. Since this is a second semester class I assume all students have completed such a course. I also assume knowledge of first semester game theory.

GRADES AND REQUIREMENTS

There are two graded components in the course:

1. Student presentations (20%). We will allocate presentations at the beginning of the course. Students will give a presentation on one of the applied readings marked with a '*.' The purpose of the presentations will be to work through the proofs the paper and teach the material to the rest of the participants. Grades will be assigned based on being correct, reasonably complete, and useful. There should be a healthy balance between technical details and intuition. The presentations will be 30-45 minutes to allow plenty of time for discussion afterward.

2. Problem sets (80%). I will assign approximately 6 problem sets of one or two problems each, due throughout the semester.

COURSE POLICIES

- Attendance Policy. Students must attend the course.
- Late assignments. Late assignments may be accepted with a 10% deduction before graded assignments have been returned to students. After that time, late assignments will not be accepted.
- Accommodations due to disability. If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours.

COURSE SCHEDULE

The course schedule is divided into seven two week sections covering one technical topic. Generally, the first week's reading in each section covers some technical tool. The second week's reading is an applied paper that makes some use of that tool and that I think you will find substantively interesting. All readings will be on Canvas except for Tadelis which I expect you already own.

Existence and fixed points

January 23 McCarty and Meirowitz Chapter 5 sections 4-10

January 30 Application: Penn 2008*

Comparative statics

February 6 McCarty and Meirowitz Chapter 5, section 11, and Ashworth and Bueno de Mesquita 2006

February 13 Application: Schnakenberg, Schumock, and Turner 2023*

Dynamics

February 20 Gehlbach Chapter 9

February 27 Application: Dziuda and Loeper 2018*

Mechanism design

March 6 Tadelis Chapter 14

March 13 SPRING BREAK

March 20 Application: Fey and Ramsay 2011.*

Global games

March 27 Morris and Shin 2003

April 3 Boix and Svovik 2013*

Information transmission

April 10 Sobel 2013

April 17 Gehlbach and Sonin 2011*

April 24 Schnakenberg 2017*