POLITICAL SCIENCE 506: THEORIES OF INDIVIDUAL AND COLLECTIVE CHOICE II

Washington University
Department of Political Science
Spring 2010
8-10AM Monday
Seigle 111

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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 core applications in political science and having students produce an original theoretical paper.

The textbook for this course is Fudenberg and Tirole's *Game Theory* (F&T). I also recommend but do not require *Game Theory: An Introduction* by Steven Tadelis. Most of the readings are from articles and can be easily accessed by clicking the hyperlinks on this syllabus. I have asked students to provide me with a statement of broad research interests and the articles were selected to track those interests as closely as possible subject to the constraint of covering the technical topics that form the basis of the course. One exception to that rule is that I am deliberately steering clear of electoral accountability

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.

GRADES AND REQUIREMENTS

The course grade will be determined as follows:

- Problem set (10%). There is one problem set. It will be distributed on the first day of class and is due on the last day of class. Pace yourself. Do not wait until the last week. I am willing to offer feedback on problems as you complete them and you should take advantage of that opportunity.
- Teaching presentation (10%). You will present one paper from the readings to the class. The purpose is to dig into the nuts and bolts of the paper, re-produce the proofs, and teach them to the class. This presentation will last about 45 minutes. Slides are fine if your handwriting is bad but you can just use the blackboard for visual aid. I will inform students of their teaching presentation assignments on the first day of class.

- Research presentation (10%). On the last day of class you will give a conference-style presentation of your paper to the class. This presentation will be about 12 minutes. The goal here is absolutely not to dig into the nuts and bolts of the paper but instead to communicate what you found succinctly and in an engaging way. Slides are required.

- Final paper (70%). Students will write an original research paper using a game-theoretic model on a topic of your choice. I expect all students to start thinking about their topics right away and to consult with me early and often.

COURSE POLICIES

- Attendance Policy. I do not take attendance, though as a practical matter you will probably fail this course if you do not attend. Attendance is required on days that include in-class activities such as a presentation.

- 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 TOPICS

A list of course topics is below.

01/14: Introduction Note: Start thinking about your paper topic immediately

Reading: Hal Varian (1997) How to Write an Economic Model in Your Spare Time

01/21: No class. MLK Day.

01/28: Nash Equilibrium: A Re-Introduction A more technical introduction to Nash Equilibrium including the main proofs of equilibrium existence using fixed point theorems

Reading: Read sections 1.2, 1.3, and 12.2 and skim section 12.1 of F&T

02/04: Comparative Statics Traditional comparative statics + supermodular games and monotone comparative statics

Reading: F&T 12.3 and Ashworth and Bueno de Mesquita Monotone Comparative Statics for Models of Politics.

You may also wish to review the implicit function theorem (Simon and Blume Chapter 15 is a good place to look.)

02/11: Advanced Bayesian Games and Mechanism Design An introduction to mechanism design.

Reading: F&T Chapter 7. You may skip or skim the '† † †' sections.

02/18: Mechanism Design Examples Two examples of political science papers using mechanism design.

Reading: Fey and Ramsay. Uncertainty and Incentives in Crisis Bargaining
Gailmard. Discretion Rather than Rules

02/25: Dynamic Games of Incomplete Information: A Re-Introduction A deeper dive into dynamic games with observed actions and incomplete information.

Reading: F&T Chapter 8 and 11.2

03/04: Dynamic Games of Incomplete Information: Examples Asymmetric information

Reading: Ellis and Groll. Who Lobbies Whom? Special Interests and Hired Guns
Gordon and Hafer. Flexing Muscle: Corporate Political Expenditures and Signals to the Bureaucracy

03/11: No class Spring break.

03/18: Dynamic Games of Incomplete Information: Examples II Learning without asymmetric information

Izzo. With Friends Like These, Who Needs Enemies?
Kang. Separation of Powers, Elections, and Persuasion in Policy Reform

03/25: Cheap talk Models of communication in which messages do not directly affect payoffs

Reading: Tadelis Chapter 18 (provided)

04/01: More information transmission Models of communication and information design.

Reading: Kamenica and Gentzkow. Bayesian Persuasion
Schnakenberg. Informational Lobbying and Legislative Voting
Lipnowski and Ravid. Cheap Talk with Transparent Motives

04/08: Global Games Coordination and collective action with many players and incomplete information

Reading: Morris and Shin. "Global Games: Theory and Applications"
Boix and Svolik. The Foundation of Limited Authoritarian Government.

04/15: Markov games A very useful solution concept for more complex dynamic games. Focus here is on complete information.
Reading: F&T Chapter 13. Skip 13.4.

04/22: Infinite horizon game examples Some examples of infinite horizon games with incomplete information.
Forand. Civil Service and the Growth of Government

Fong. The Allocation of Rights to Congressional Leaders

Finals Week (date TBA) : Meeting of the Seigle Hall Political Science Association Paper presentations