This class presents an advanced treatment of noncooperative game theory and its application to the study of American politics. The purposes are to solidify students’ grasp of game theory as a modeling tool in political science, and to enable students to use formal models to make innovative substantive arguments in their areas of research.

The course is organized around major families of models widely used by modelers who study American politics (though they would probably be useful in other fields, particularly in the analysis of “highly institutionalized” environments). Within each family, readings draw from the study of Congress, the bureaucracy, the presidency, courts, voters, etc., as appropriate. This approach involves tradeoffs: many interesting models develop an original framework and do not fit into one of these canonical families. On the other hand, mastering the canonical models is a good way to learn how to develop an extension for one’s own work, as well as to become conversant with the literature.

REQUIRED SKILLS. Students enrolled for credit must have some prior graduate-level training in game theory at the level of PS232-A or higher, and facility with multivariate calculus, basic probability theory, and basic set theory and logic at the level of PS230 or higher. Some facility with developing a formal proof of a logical proposition is very helpful. It is impossible to write a paper with an original model without this skill.

Readings come primarily from journal articles. The articles on the syllabus are not intended to be a comprehensive list of applications of a particular modeling approach. Some are classics, some are more recent, but all are included because they are (1) good illustrations of a particular modeling approach, and (2) amenable to extension by students at an intermediate level.

Our pace through the topics and readings will be adjusted liberally. I will make announcements in class or via email about readings that students should tackle in advance of the next week’s class session. Besides the first session, it is important to do readings before the class in which we cover them, and also after that class as well. It is rare that intro-intermediate students understand what is happening in a model on the first pass through.

Grades

The course grade will be based on a mix of class participation and a final paper.

Class sessions, while primarily composed of lectures, will require extensive student involvement and participation. This will take the form of critique of the link between a model and substantive issue, discussion of technical issues in modeling, and most of all simply informed questions from students.

At the end of the semester each student must submit a paper that uses formal modeling to explore some issue in his or her substantive field of research. The paper should be in the style of a conference paper or journal article. It should have a beginning, middle, and end. The model must be in the middle somewhere. The paper may develop a new model (or extend an existing one), execute an empirical test of an existing formal model, or both.
Sequence of Topics and Readings

**Topic 1: Preliminaries.** Preferences, games, equilibrium concepts.

Readings:

- *Political Game Theory*¹ 2.0–2.5
- *Political Game Theory* 3.0–3.2.

**Topic 2: Agenda Setting.** The Romer-Rosenthal model.

Readings:

- Gary Cox and Mathew McCubbins. Selections from *Setting the Agenda* (2005).

**Topic 3: Cheap Talk.** The Crawford-Sobel model.

Readings:

- Joseph Harrington. Chapter 12 from *Games, Strategies, and Decisions*.

¹Entries from *Political Game Theory* list chapter followed by section; e.g. 2.5 is chapter 2, section 5; 2.0 is the introductory material in chapter 2 before section 1.
Topic 4: Discretion and Expertise.

Readings:


Topic 5: Principal-Agent Models.

Readings:


Topic 6: Signaling Games.

Readings:

Topic 7: Voting.

Readings:


Topic 8: Bargaining.

Readings:

- *Political Game Theory* 9.0–9.5, 10.0–10.4, 7.8