Course Overview

This course is an introduction to formal theory (aka “rational choice theory” and “positive political theory”), which is the mathematical representation of some political process.

The course is split up into three parts. The first covers *social choice*, which is concerned with the aggregation of individual preferences into group preferences. That is, given that legislators have some set of preferences, what policy will the legislature as a whole most prefer? The second and largest section covers *non-cooperative game theory*, which is the dominant application of positive political theory currently in political science. Game theory allows one to analyze how strategic political actors interact. In addition to learning tools, we will periodically read journal articles in order to see game theory in action in political science. The last section (time permitting) will cover some further *applications* in political science. One research area is called the New Institutionalism, which seeks to understand how institutions influence political outcomes by framing the competitive environment between political actors. Lastly, an approach to studying politics that has grown recently is EITM, Empirical Implications of Theoretical Models. This approach stresses the use of formal theory to derive hypotheses that are then tested, often using a large-N, multivariate statistical analysis.

There is no math prerequisite for the course. But because formal theory is the “mathematical representation of politics,” mathematics will be used throughout the course. This will be both indirectly (understanding articles) and directly (learning the tools of game theory and completing problem sets). Most assignments will only require relatively rudimentary algebra, but there might be some calculus in certain parts of the course. But not to worry. I will be sure to provide sufficient background in any necessary mathematical techniques.

Readings

Riker, William. 1982. *Liberalism Against Populism*

Osborne, Martin. 2004. *An Introduction to Game Theory*

Various book chapters and journal articles. I will try to find journal articles to match student interests.

NOTE: During the game theory section of the course, the Osborne readings should be completed by Tuesday. Any additional journal articles should be read for Thursday’s session.
Grading

Class Participation 10%: You are expected to come to class prepared, having completed the readings for that day.

Problem Sets 40%: There will be several problems sets assigned throughout the semester. You are free to work in groups (and I actually strongly suggest doing so), but each individual needs to turn in their own copy.

Two Exams, each 25%. Time and format t.b.d.

Topics and Readings (subject to changes)

Jan 12  Introduction to Rational Choice  

  SOCIAL CHOICE

Jan 19  Individual Preferences  
T: McCarty and Meirowitz – Chapter 2, skip sections 2 and 4;  
  & Chapter 3, skip section 5 [handout]  
R: Finish.

Jan 26  Social Choice  
T: Riker, chapters 2-4 (skip 2.A.)  
R: Riker, chapters 5-7

Feb 2  Spatial Models and Chaos  
T: Black (JPE, 1948); Hinich and Munger (chapters 2-3) [handout];  
  Optional: Davis, Hinich, and Ordeshook (APSR, 1970)  
R: Feld and Grofman (AJPS, 1987)

  GAME THEORY

Feb 9  Nash Equilibrium  
Osborne 1 and 2

Feb 16  Examples of NE  
Osborne 3; Fearon (APSR, 1994)

Feb 23  Mixed Strategy  
Osborne 4
Mar 2  Extensive Games with Perfect Information
       Osborne 5

Mar 9  Spring Break!

Mar 16 Examples of Extensive Games
       Osborne 6

Mar 23 Bayesian Games
       Osborne 9

Mar 30 Extensive Games with Imperfect Information
       Osborne 10

Apr 6  Repeated Games
       Osborne 14

Apr 13 Bargaining
       Osborne 16; Baron and Ferejohn (APSR, 1989)

Additional Applications

Apr 20 New Institutionalism
       TBD

Apr 27 Empirical Implications of Theoretical Models (EITM)
       TBD