This course surveys applications of natural science methods in the analysis of normatively significant political problems. Its unifying themes are the EITM (Empirical Implications of Theoretical Models) project of the National Science Foundation and the promise of policy relevant research on important topics like electoral law enforcement and conflict early warning. We begin with a study of mathematical reasoning in political science. We review models of unitary, political decision making, strategic choice in two person and n-person settings. Agent-based, computational modeling also is reviewed. We then turn to empirics. Research design, measurement, human experimentation, modeling of micro and macro political processes, and cross-level inference are studied in this third part. In the conclusion, efforts to join mathematical, statistical, and computational approaches are studied. These efforts come from the fields of American, Comparative, and International Politics.

Students are required to complete all the required reading for the course and to write two papers. The first is a critical review of a selection of readings for one of the weeks in Parts Two (weeks III-VI) or Three (weeks VII-XII). The second paper is a research design for the application of a method studied in the course. If this method comes from Part Two, students are urged to write their first paper on readings from Part Three. If the second paper is a design for an application of a method from Part Three, ideally, the first paper should be a critical evaluation of work in a week in Part Two.

In addition, all students also are required to present one reading in class and to write a final examination that covers the reading for the entire course.

The final grade for the seminar will be weighted roughly as follows: class participation—15%, paper one—25%, paper two—25%, and final examination—35%.

NB. Many of the readings are available directly through JSTOR (www.jstor.org)
Part One: Motivation

I. Introduction and organization.
[Jan. 20]

II. Puzzles, problems, debates and agendas
[Jan. 27]

Required-Thematic


Required-Praxis; Applications in law and international relations)


Recommended


Symposium: Two Paths to a Science of Politics (2004), Perspectives on Politics 2(2): 295-324:
   Brady, Henry E. “Introduction”

Part Two: Political theorizing through mathematics

III. Political decision making (rational choice and decision theory)  
[Feb. 3]

**Required:**


**Recommended**


IV. Strategic decision making in “two person” settings
[Feb. 10]

Required

Osborne, Martin J. (2004) An Introduction to Game Theory NY Oxford University Press: Chapters 1, 2, 4 (pps. 11-54, 99-152)


Recommended


V. Collective decision making, part one
[Feb. 17]

Required


Hinich, Melvin and Michael Munger (1997) Analytic Politics NY: Cambridge University Press, Chapters 2, 3, 5 (pps. 21-72; 90-114)


Recommended


VI. Collective decision making, part two [computational approaches methods] [Feb. 24]

Required


Two of the following three articles:


Recommended


Part Three: Testing political theories and uncovering (political) stylized facts

VII. Research design and Causality

[March 3]

Required


At the 23rd Annual Summer Meeting of the Political Methodology Society
University of California, Davis.


**Recommended**


Daniel Ho et al. (2007 “Matching As Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference” Political Analysis 15(1)


Gingerich, Daniel W. 2009 “Corruption and Political Decay: Evidence from Bolivia” Political Analysis 4: 1-34.


VIII. Measurement and identification
[March 10]

Required


Recommended


Freeman, John R. (1989) “Systematic Sampling, Temporal Aggregation and the
Study of Political Relationships,” Political Analysis vol 1, Ann Arbor, University Of Michigan Press, pps. 61-98.


*****Spring Break*****

IX Experimental methods
[March 24]

Required


American Political Science Review 102(3): 303-318.

Recommended


X. Analyzing micropolitical processes

[March 31]

Required


Recommended


XI. Analyzing macropolitical processes
[April 7]

Required


Recommended

NY Cambridge University Press.


Campaign Spending


XII. Cross-level and multi-level inference

[April 14]

Required


Recommended


M. Herron and K. Schotts “Using Ecological Inference Point Estimates as Dependent Variables in Second Stage Regressions”

C. Adolph and G. King, “Comment on Herron and Schotts”

M.Herron and K. Schotts “Cross-contamination in EI-R: A Reply”

C. Adolph and G. King with M.Herron and K. Schotts, “A Consensus Second Stage Analyses in Ecological Inference Models”


A Symposium on Multilevel Modeling for Large Clusters. Special Issue of Political Analysis 13(4). Articles by Kedar and Shively, Bowers and Drake, Jusko and Shively, Lewis and Linzer, Huber et al, Duch and Siverson, Kedar, Franzese, and Achen with Comments by Beck and Gelman.
Part Four: Syntheses

XIII. Political economy
[April 21]

Required

Duch, Raymond M. and Randolph A. Stevenson (2008) “Competency Signals and Rational Retrospective Economic Voting” and “Political Control of the Economy” Chapters 5 and 7, respectively in The Economic Vote: How Political and Economic Institutions Condition Electoral Results NY: Cambridge University Press.


Sattler, Thomas, Patrick Brandt and John R. Freeman “Democratic Accountability in Open Economies.” Unpublished manuscript.

Recommended


Kollman, Kenneth, John Miller and Scott Page Editors (2003) Computational Models of
Political Economy Cambridge, MA MIT Press.


XIV. Bayesian approaches to political analysis
[April 28]

Required


Recommended


Required

Reread EITM, Empirical Implications of Theoretical Models (2002) [from Week I]

Recommended
An exchange in the Autumn 2007 issue of *Political Analysis*


