
POLS 6396: Formal Models in International Relations

University of Houston, Department of Political Science

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Course Info:

Spring 2014

Days and Time: M 5:30–8:30 PM

Room Number: TBD

Course Description

This is a course, designed for graduate students who are interested in the formal analysis of international relations. The course is meant to provide students with a thorough understanding of how the rational choice approach and the use of mathematical models can help to answer questions about international relations. We will build slowly, starting from an introduction to rational choice theory and its applications in IR, moving to the formalization of the rational approach through game theory, integrating this with the mathematical tools necessary to develop and solve formal models, and finally, examining some of the key literature in the field. The course will culminate in students developing their own ideas, which they will explore formally in a research paper.

The objectives of the course are threefold. First, by the end of the semester, students will have become smart consumers of IR research. They will have the ability to choose an international relations article and understand (and even critique) the formal analysis, including proofs. Second, the emphasis on the development and practical implementation of a final research project will put students on the road to becoming producers of knowledge. They will acquire the capacity to construct interesting theoretical questions and to analyze them using formal modeling techniques. Finally, students will sharpen their analytical skills, and learn to think about the world in a more rigorous manner. This will be a useful foundation for both research and future coursework.

Grading Policies

Evaluations of student performance will be based on small homework assignments, the presentation and discussion of relevant articles (second half of the semester), and an independent research project (end of the semester). Students are encouraged to collaborate on the homework (though **not** on the research project), but are expected to turn in their own, independent assignment. Final grades will be calculated in the following way:

- Homework: 10%

- Class Presentations: 30%
- Final Project: 60%

Research Project

During the semester, all students are expected to complete a research project. This will be a short research paper, in which students pose a theoretical question about international relations, and build an appropriate theoretical model to be solved. Although students are not required to solve and analyze the model completely during the semester, they should describe the strategy for doing so, and provide some intuition about what they expect to find. The project will be evaluated on the question posed, the rigor of the theoretical model, and the model's appropriateness with respect to the question being investigated. We will discuss the research project in more detail during the course.

In the middle of the semester, we will have a brainstorming session, in which students will discuss their potential ideas and research strategies. Students are also strongly encouraged to discuss their ideas with the instructor in advance, or to submit potential topics for feedback. The final paper is due on the last day of class. **Unless cleared with the instructor *in advance*, late work will be penalized 10% per day.**

Readings

Readings will evolve during the course. In the first part of the class, we will concentrate on foundational readings, including books articles on the use of rational choice theory in international relations, as well as chapters from mathematics and game theory textbooks. In the second part of the class, we will examine the application of formal theory in IR more specifically, and we will move toward articles that apply the technique.

The following books are required:

- Osborne, Martin J. 2003. *An Introduction to Game Theory*. Oxford: Oxford University Press.
- Moore, Will H. and David A. Siegel. 2013. *A Mathematics Course for Political and Social Research*. Princeton, NJ: Princeton University Press.
- Powell, Robert. 1999. *In the Shadow of Power: States and Strategies in International Politics*. Princeton, NJ: Princeton University Press.

The following books are recommended, and may help you in creating and solving your own models:

- Simon, Carl P. and Lawrence Blume. 1994. *Mathematics for Economists*. New York: W. W. Norton & Co.

- Gibbons, Robert. 1992. *Game Theory for Applied Economists*. Princeton, NJ: Princeton University Press.
- Cupillari, Antonella. 2012. *The Nuts and Bolts of Proofs: An Introduction to Mathematical Proofs*. Waltham, MA: Academic Press.

Academic Honesty

All University of Houston students are expected to adhere to the rules and spirit of the school's policies on academic honesty, which are detailed in the Student Handbook and posted online. In this course, although it is certainly acceptable for students to study together and to work together on homework assignments, all write-ups should be completed independently. The course requires a written research paper and students should be especially careful to understand what constitutes plagiarism and to avoid it. To avoid any ambiguities, students should see the section on "Academic Honesty" in the Student Handbook for a full statement regarding UH's rules against cheating and plagiarism (<http://catalog.uh.edu/content.php?catoid=6&navoid=1025>). Violation of the university's policy on academic honesty in an assignment or activity will almost invariably result in a failing grade, and may result in expulsion from the university.

Americans with Disabilities Act

The American with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact UH's Center for Students with Disabilities (CSD) at (713) 743-5400 to make arrangements.

Course Outline

Week 1

- Course Introduction
- Rational Choice Theory
 - Riker, William H. 1995. "The Political Psychology of Rational Choice Theory." *Political Psychology* 16(1): 23-44.
 - Morrow, James D. 1997. "A Rational Choice Approach to International Conflict." In *Decisionmaking on War and Peace: The Cognitive-rational Debate*, ed. Nehemia Geva and Alex Mintz. Boulder, CO: Lynne Rienner Publishers, pp. 11-32.

- Walt, Stephen. 1995. "Rigor or Rigor Mortis? Rational Choice and Security Studies." *International Security* 23(4): 5-48.
- Johnson, James. 2010. "What Rationality Assumption? or, How 'Positive Political Theory' Rests on a Mistake." *Political Studies* 58(2): 282-299.

Week 2

- Strategic Interaction in International Relations
 - Schelling, Thomas C. 1960. *The Strategy of Conflict*. Cambridge, MA: Harvard University Press.
 - Schelling, Thomas C. 1966. *Arms and Influence*. New Haven, CT: Yale University Press.

Week 3

- Understanding Basic Game Theory (Part I): Nash Equilibria and Games of Complete Information
 - Osborne, *Introduction to Game Theory*, Chs. 1, 2, 4, 5

Week 4

- Understanding Basic Game Theory (Part II): Games of Incomplete Information
 - Osborne, *Introduction to Game Theory*, Chs. 9, 10
- **HW #1 Due**

Week 5

- Calculus and Optimization Theory
 - Moore & Siegel, *Mathematics for Political and Social Research*, Chs. 5-8, 15-17
- **HW #2 Due**

Week 6

- Formalizing IR Theory
 - Powell, *In the Shadow of Power*
- **Brainstorming Session**
- **HW #3 Due**

Week 7

- Bargaining
 - Osborne, *Introduction to Game Theory*, Ch. 16
 - Muthoo, Abhinay. 2000. "A Non-Technical Introduction to Bargaining Theory." *World Economics* 1(2): 145-166.
 - Morgan, T. Clifton. 1984. "A Spatial Model of Crisis Bargaining." *International Studies Quarterly* 28(4): 407-426.
 - Wagner, Harrison. 2000. "Bargaining and War." *American Journal of Political Science* 44(3): 469-484.

Week 8

- Information and War
 - Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49(3): 379-414.
 - Fey, Mark and Kristopher W. Ramsay. 2007. "Mutual Optimism and War." *American Journal of Political Science* 51(4): 738-754.
 - Slantchev, Branislav L. and Ahmer Tarar. 2011. "Mutual Optimism as a Rationalist Explanation of War." *American Journal of Political Science* 55(1): 135-148.
 - Leventoğlu, Bahar and Ahmer Tarar. 2008. "Does Private Information Lead to Delay or War in Crisis Bargaining?" *International Studies Quarterly* 52(3): 533-553.

Week 9

- War as a Commitment Problem
 - Powell, Robert. 2006. "War as a Commitment Problem." *International Organization* 60(1): 169-203.
 - Fey, Mark, Adam Meirowitz, and Kristopher Ramsay. 2013. "Credibility and Commitment in Crisis Bargaining." *Political Science Research and Methods* 1(1): 27-52.
 - Wolford, Scott, Dan Reiter, and Clifford J. Carrubba. 2011. "Information, Commitment, and War." *Journal of Conflict Resolution* 55(4): 556-579.
 - Schultz, Kenneth A. 2010. "The Enforcement Problem in Coercive Bargaining: Interstate Conflict over Rebel Support in Civil Wars." *International Organization* 64(2): 281-312.

Week 10

- Terrorism
 - Lake, David A. 2002. "Rational Extremism: Understanding Terrorism in the Twenty-first Century." *Dialogue IO* 1(1): 15-29.

- Bueno de Mesquita, Ethan. 2005. "The Quality of Terror." *American Journal of Political Science* 49(3): 515-530.
- Wintrobe, Ronald. 2006. "Extremism, suicide terror, and authoritarianism." *Public Choice* 128(1): 169-195.
- Bapat, Navin. 2006. "State Bargaining with Transnational Terrorist Groups." *International Studies Quarterly* 50(1): 213-229.

Week 11

- Mediation

- Kydd, Andrew. 2003. "Which Side Are You On? Bias, Credibility, and Mediation." *American Journal of Political Science* 47(4): 597-611.
- Rauchhaus, Robert W. 2006. "Asymmetric Information, Mediation, and Conflict Management." *World Politics* 58(2): 207-241.
- Fey, Mark and Kristopher W. Ramsay. 2010. "When Is Shuttle Diplomacy Worth the Commute? Information Sharing through Mediation." *World Politics* 62(4): 529-560.
- Kim, Jin Yeub. 2015. "Endogenous Mediator Selection: A Source of Inefficiency in Bargaining." Unpublished manuscript.

Week 12

- International Institutions

- Koremenos, Barbara. 2005. "Contracting Around International Uncertainty." *American Political Science Review* 99(4): 549-565.
- Fang, Songying and Erica Owen. 2011. "International institutions and credible commitment of non-democracies." *Review of International Organizations* 6(2): 141-162.
- Fang, Songying. 2010. "The Strategic Use of International Institutions in Dispute Settlement." *Quarterly Journal of Political Science* 5(2): 107-131.
- Johns, Leslie. 2012. "Courts as Coordinators: Endogenous Enforcement and Jurisdiction in International Adjudication." *Journal of Conflict Resolution* 56(2): 257-289.

Week 13

- Trade Policy

- Rosendorff, B. Peter and Helen V. Milner. 2001. "The Optimal Design of International Trade Institutions: Uncertainty and Escape." *International Organization* 55(4): 829-857.
- Reinhardt, Eric. 2001. "Adjudication without Enforcement in GATT Disputes." *Journal of Conflict Resolution* 45(2): 174-195.

- Johns, Leslie. 2014. "Depth versus rigidity in the design of international trade agreements." *Journal of Theoretical Politics* 26(3): 468–495.
- Queralt, Didac. 2015. "From Mercantilism to Free Trade: A History of Fiscal Capacity Building." *Quarterly Journal of Political Science* 10(2): 221–273.

Week 14

- Class Research Presentations
- Course Wrap Up
- **Research Projects Due**