
POLS 6332: Formal Models in International Relations

University of Houston, Department of Political Science

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Course Info:

Fall 2020
Days and Time: Tuesday 2:00–5:00 PM
Room Number: Online
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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.

You're taking this course during the COVID-19 pandemic of 2020. So things are going to be a little weird. Our meetings will take place using the Microsoft Teams software, and we'll do our best to maintain some semblance of normalcy. We can expect the semester to be unique in a number of ways, and we'll respond as well as we can to any challenges that arise along the way. You may run into technological problems, medical problems, or issues with online learning. If any of these (or anything else) should come up, **do not hesitate to email me.**

Grading Policies

Evaluations of student performance will be based on small homework assignments, a series of short responses papers, 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 assignments. Class participation is expected. Final grades will be calculated in the following way:

- Homework: 10%
- Response Papers: 30%
- Participation: 15%
- Final Project: 45%

Response Papers

Over the course of the semester, students will turn in five short essays, covering the readings for a given week. We have about ten weeks of readings in this class, so you can expect to write essays for about half of them. Essays should be no longer than two pages, and should provide an analytical summary of the week's readings. Students should give a brief (approximately one paragraph) overview of the set of readings for the week, and then choose one or two to discuss in depth. In writing about a paper, keep the following points in mind:

1. What is the central question?
2. What is the central answer?
3. What are the competing explanations?
4. Why are they wrong?
5. How does the model contribute to the argument?
6. What problems does it have?
7. How could this be improved?

The paper for a given week is due by noon on the day that we discuss the readings (i.e., two hours before class begins). Because you'll have many chances to submit these, late response papers will **not** be accepted.

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.**

The papers will be submitted through Turnitin, so please don't plagiarize. If you have questions or concerns about what constitutes plagiarism, talk to me. While self-plagiarism should be avoided to the extent possible, I am of the opinion that it is sound strategy to maximize what you can get out of the papers you write in graduate school. So if you want to expand upon something you've already written, I am generally fine with that, but please clear it with me in advance. If you want to use a paper that you write in this class to satisfy requirements in another class as well, please be sure to talk to me *and* to clear it with your other instructor before doing so.

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. Some papers are marked with an asterisk (*). We will work through these papers a bit more carefully, and discuss the models in depth. Students should pay especially close attention to the models in these papers as they read.

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.

- 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.

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.

Computer Problems

Hard drive crashes and fried motherboards are almost inevitable. In all likelihood, you will experience these problems at least once in your careers. But dead laptops and bricked hard drives are no longer the problems that they once were. Since this class involves outside work that you'll be doing on home computer, *I expect you to maintain backups of your work*. If you don't already have an account with a cloud storage and syncing service, let me recommend Dropbox (<http://www.dropbox.com/>) or Google Drive (<http://www.google.com/drive/>). Using one of these (or a similar service) to back up your work will ensure that you will have access to it even in the event of a crash. Let me stress once more: **"my computer died just before I was going to turn in my assignment" is no longer a valid excuse.**

Students with Disabilities

The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students with a disability. In accordance with Section 504 and ADA guidelines, the University of Houston strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. Students seeking accommodation in this course should contact the instructor after obtaining the appropriate documentation through the UH Center for Students with Disabilities.

UH CAPS Statement

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (<http://www.uh.edu/caps>) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the "Let's Talk" program, a drop-in consultation service at convenient locations and hours around campus. http://www.uh.edu/caps/outreach/lets_talk.html

Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston Undergraduate Excused Absence Policy and Graduate Excused Absence Policy for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Additional policies address absences related to military service, religious holy days, pregnancy and related conditions, and disability.

Recording of Class

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Center for Students with DisABILITIES. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure

to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Syllabus Changes

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through email, and modified syllabi will appear on the class Blackboard website.

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, *The Strategy of Conflict*
 - Schelling, *Arms and Influence*, Chs. 1–3

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*
- **HW #3 Due**

Week 7

- **Brainstorming Session**

Week 8

- 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 9

- 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.
- Lindsey, David. 2015. "Military Strategy, Private Information, and War." *International Studies Quarterly* 59(4): 629–640.

Week 10

- 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.
 - (*) Wolford, Scott. 2018. "Wars of Succession." *International Interactions* 44(1): 173–187.

Week 11

- 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.
 - Bapat, Navin. 2006. "State Bargaining with Transnational Terrorist Groups." *International Studies Quarterly* 50(1): 213–229.
 - (*) Spaniel, William. 2019. "Rational Overreaction to Terrorism." *Journal of Conflict Resolution* 63(3): 786–810.

Week 12

- 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.

- Ramirez, Shawn L. 2018. "Mediation in the Shadow of an Audience: How Third Parties Use Secrecy and Agenda-Setting to Broker Settlements." *Journal of Theoretical Politics* 30(1): 119–146.

Week 13

- 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.
 - Martin, Lisa L. 2017. "International Institutions: Weak Commitments and Costly Signals." *International Theory* 9(3): 353–380.

Week 14

- 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.
 - Queralt, Didac. 2015. "From Mercantilism to Free Trade: A History of Fiscal Capacity Building." *Quarterly Journal of Political Science* 10(2): 221–273.
 - (*) Johns, Leslie and Krzysztof J. Pelc. 2018. "Free Riding on Enforcement in the World Trade Organization." *Journal of Politics* 80(3): 873–889.

Week 15

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