

PSCI 8360: Formal Models of IR

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This course provides an overview of the formal theoretical literature on international politics, with a disproportionate but not exclusive focus on theories of conflict. Because international political outcomes are the product of strategic interactions among states, formal models and game theory are invaluable tools for developing theories of international relations.

A primary goal of the course is to learn how to produce, not just consume, sophisticated models of IR.¹ To this end, our discussions of the readings will focus on *how* these papers arrive at their conclusions—the finer details of the modeling choices, the guts of the proofs.

Contact

My office hours are on Tuesday from 10:30am–12:00pm in Commons 326. You can also just drop by whenever my door is open, though I may ask you to come back later if I don't have time at the moment.

You can also email me questions at brenton.kenkel@gmail.com. I try to respond to student emails within a business day. I don't often reply to emails at nights or on weekends.

Requirements

Reading and Weekly Presentations

You will read one article per week. This should be read carefully, with attention to the modeling details—not digested and filed away as quickly as possible, as you might do in a normal seminar with hundreds of pages a week

¹By sophisticated I don't mean complicated. Usually the most sophisticated models are the simplest ones.

of reading. To be a modeler, you are better off understanding a few models at a deep level than having a passing familiarity with very many models.

Each week (other than the first), three students will present portions of the paper at the whiteboard. One student will present and explain the setup of the model, and the next two will present and prove key results from the paper. Responsibilities will be divvied up a week in advance. Each presentation should last about 30 minutes, leaving us some time at the end of class to discuss the paper in broader terms. I'll also circulate my own notes about each paper right before the class where we cover it.

Problem Sets

There will be two problem sets assigned over the course of the semester. The goal of these assignments is to make sure you are keeping your mathematical skills sharp. You will have two weeks to complete each one.

Literature Review

Late in the semester, you will learn everything there is to know about the formal literature on a substantive topic or question in the study of IR. (What topic? It should probably be related to your final paper—see below.) You will undertake a *comprehensive* literature review, reading every single formal paper on the topic, and you will summarize your findings in a paper of your own. Depending on your choice of topic, the recommended readings listed in the syllabus may provide a good starting point.

This paper is not a book report. It should be written in the style of the literature review in a published paper, though it will probably end up longer than a typical lit review section. Optimal lengths will vary, but I'm imagining 5–10 pages. You should address not only what questions the literature has answered, but also those that it *hasn't*.

The literature review will be due at 5:00 p.m. on Friday, November 18.

Final Paper

You will write a final paper using a formal model to advance a novel theory of an important substantive question in international relations. At a minimum,

I expect you to have a feasible model setup, and a solved equilibrium for some substantively compelling subset of the parameter space. The idea is to come away with a model framework that would be workable as the foundation of a second-year paper or dissertation chapter. Non-IR students' papers need not be about IR topics, but they should draw from the modeling concepts we cover in this course.

The paper should be written in the style of an academic publication. Results should be stated in the form of lemmas and propositions, and formal proofs should be supplied. Look to the papers I've assigned in this course as models for structure and content. This includes your proofs—you'll notice that good proofs are written in ordinary language and are not simply walls of math. Translating the nonsense on your legal pad into something other scholars can comprehend is a critical part of writing formal papers.

You should be thinking about ideas for the final paper from the moment the course begins. It would be good to have settled on a direction by late October—coming up with good models takes way more time than solving models. By the first week of November, you should have corresponded with me by email or in office hours about the paper and have received my approval to go ahead with your idea.

You will give brief presentations of your projects on the last day of class. The final paper itself will be due at 5:00 p.m. on Wednesday, December 14.

tl;dr

- Weekly presentation of setup/results from that week's article.
- Problem sets handed out in September and October, with two weeks to do them.
- Lit review due right before the Thanksgiving break.
- Final paper due at the end of the exam period.

Your grade will be based on a convex combination of these things. Any time you spend worrying about your grade is time you're not spending learning to write better proofs.

Schedule and Readings

August 24: Bargaining and War

Required: Fearon (1995).

Recommended: Brito and Intriligator (1985), Wagner (2000), Reiter (2003), Walter (2009), Lake (2010), Kennard, Krainin and Ramsay (2020).

August 31: Costly Signaling

Required: Fearon (1997).

Recommended: Schultz (2001), Slantchev (2005), Kurizaki (2007).

September 7: Reputation

Required: Acharya and Grillo (2015).

Recommended: Kreps and Wilson (1982), Sartori (2002), Walter (2006).

September 14 cancelled due to APSA.

September 21: Arming

Required: Meirowitz and Sartori (2008).

Recommended: Coe (2011), Fearon (2018), Meirowitz et al. (2019).

September 28: Commitment

Required: Garfinkel and Skaperdas (2000).

Recommended: Powell (2006), Leventoglu and Slantchev (2007), Beviá and Corchón (2010), Debs and Monteiro (2014), Benson and Smith (2021).

October 5: Domestic Politics

Required: Krainin and Ramsay (2022).

Recommended: Fearon (1994), Schultz (1998), Bueno de Mesquita et al. (1999), Jackson and Morelli (2007), Debs and Goemans (2010).

October 12: Deterrence

Required: Baliga, Bueno de Mesquita and Wolitzky (2020).

Recommended: Powell (1989), Chassang and Miquel (2010), Gurantz and Hirsch (2017), Di Lonardo and Tyson (2022).

October 19: Alliances

Required: Fang, Johnson and Leeds (2014).

Recommended: Garfinkel (2004), Benson, Meirowitz and Ramsay (2014), Wolford (2014), Wolford (2018), Smith (2021).

October 26: Repression

Required: Ritter (2014).

Recommended: Esteban, Morelli and Rohner (2015).

November 2: Coordination

Required: Dragu and Lupu (2018).

Recommended: Bueno de Mesquita (2010), Chassang and Miquel (2010), Shadmehr and Bernhardt (2011), Casper and Tyson (2014).

November 9: International Institutions

Required: Kennard (2020).

Recommended: Martin (1992), Koremenos (2001), Fang (2008), Fang (2010), Ritter and Wolford (2012).

November 16: Mechanism Design

Required: Banks (1990).

Recommended: Fey and Ramsay (2007, 2011), Fey and Kenkel (2020), Kenkel and Schram (2022).

November 30: Structural Estimation

Required: Crisman-Cox and Gibilisco (2018).

Recommended: Signorino (1999), Crisman-Cox and Gibilisco (2019), Gibilisco and Montero (2022), Kenkel and Ramsay (2022).

December 7: Student Presentations

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