Political Science 837  
Formal Models of International Relations  
iTV Version  

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Department of Political Science  

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Basic Information  
Meeting Time  Friday, 11:00 am to 1:00 pm (Central Time)  
Meeting Place  227 Pyle Center (327 on May 10)  
   My Office  322c North Hall  
   My Phone  608-263-2024  
   My Email  kydd@wisc.edu  
Office Hours  Wednesday 11:00 am to 12:00 pm or by appointment  

Topic  
The purpose of this course is to survey applications of game theory to international relations and further develop students’ game theoretic modeling skills. Students should have some familiarity with both game theory and international relations theory. We will cover cooperation, bargaining, the origins and termination of war, communication, multilateral politics, and the impact of domestic politics on international relations.
Requirements

Students will be required to complete a research paper for the course. The paper should take a problem of interest to the student and develop a model of it. A good ideal to strive for is the kind of model paper found in *International Organization*, where the problem is well defined and grounded in the empirical and non-formal literature and the model is relatively simple and used to provide theoretical and substantive insights. The finished result can form the basis for a dissertation chapter or a stand alone article.

Students will turn in two preliminary items and then the final paper.

- First is a research proposal which will include a statement of the topic and question to be addressed, along with a brief literature review. This will eventually become the introduction to the paper. This will be due March 8 at noon.

- Second is the set up of the model. This will include the enumeration of players, description of the game tree or strategy space, utility functions for the players and information structure of the game. This will be due April 12 at noon.

- Third is the final paper. This will solve the model and discuss the results. This will be due May 17th at noon. Length is not crucial, but shoot for 8–10 thousand words.

The proposal and model setup may be resubmitted once after responding to my comments.

All written material must have a title page resembling that usually found on an article manuscript to be circulated at a conference. It must have your name, university affiliation, course identification, date, and a title that informs the reader of both the topic and what stage it is, for instance; Paper Proposal, Model Setup or Final Draft. The body must be double spaced with page numbers and citations using the author date system with a reference list at the back in the APSA style. Papers must be submitted via email, by noon on the date due. The file name must be your last name, followed by a 1 for the proposal, 2 for the model set up and 3 for the final paper. For instance, Smith’s model setup would be smith2.pdf. Use of LaTeX is encouraged but optional.

The grade will be determined as follows.
Grading Scheme

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Paper Proposal</td>
<td>20%</td>
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<tr>
<td>Model Setup</td>
<td>30%</td>
</tr>
<tr>
<td>Final Paper</td>
<td>50%</td>
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</tbody>
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Readings

The lectures will be based on chapters from my textbook in progress.


Hereinafter this will be referred to as Kydd, *IRT*. Because the chapters are currently being rewritten, I do not want to provide them in advance in a form that may not actually correspond to the lecture as it happens, so I will send around the chapter on the day of the class.

In addition, for each week I list some readings that are a mixture of earlier material that you should have already read or should read now to catch up, and later material on the topic of the week. I strongly recommend that you read some of this literature each week, but don’t assign specific articles as required because each of you will have different ones that you have already read and different interests you want to pursue. After covering the lecture material we can discuss the readings.

At the end of the schedule I list additional topics and readings that may be of interest.

Helpful textbooks on game theory include


Some other readings may be useful to help familiarize yourself with the approach and debates surrounding it.
• Robert Powell. *In the Shadow of Power*. Princeton University Press, Princeton, 1999, is an exemplary application of game theory to international security questions, primarily relating to bargaining and war.


• In 1999 *International Security* published a forum on game theory in security studies.
  
  
  
  
  
  
  


• Ten years earlier, *World Politics* published a symposium on rational deterrence theory.


Schedule

1 Introduction

Week 1 (January 25) What States Want

• Kydd, *IRT*, Chapters 1 and 2.

Additional Readings


Week 2 (February 1) Varieties of Strategic Settings

• Kydd *IRT*, Chapter 3.

Additional Readings


Week 3 (February 8) Bargaining

• Kydd *IRT*, Chapter 4.

Additional Readings


2 Conflict and Cooperation

Week 4 (February 15) Preventive War

- Kydd *IRT*, Chapter 5.

Additional Readings

- James D. Fearon. Bargaining over objects that influence future bargaining power. 1996

Week 5 (February 22) Private Information and War

- Kydd *IRT*, Chapter 6.

Additional Readings


Week 6 (March 1) Arms Competition and War

• Kydd *IRT* Chapter 7.

Additional Readings


• George W. Downs and David M. Rocke. *Tacit Bargaining, Arms Races, and Arms Control*. University of Michigan, Ann Arbor, 1990


Week 7 (March 8) War Termination

• Kydd *IRT*, Chapter 8.

Additional Readings


• James D. Fearon. Fighting rather than bargaining

**Spring Breaks: No Class on March 15, 22, 29**

Week 8 (April 5) Cooperation Theory

Note: I will be attending ISA this weekend, so the lecture will be pre-recorded.

• Kydd *IRT*, Chapter 9.

**Additional Readings**


## 3 Communication

**Week 9 (April 12) Diplomacy**

• Kydd *IRT*, Chapter 10.

**Additional Readings**


• Avidit R. Acharya and Kristopher W. Ramsay. The calculus of the security dilemma. 2011

Week 10 (April 19) Costly Signals

• Kydd *IRT* Chapter 11.

Additional Readings


4 Multilateral Politics

Week 11 (April 26) Collective Action and Hegemony

• Kydd *IRT*, Chapter 13.

Additional Readings


**Week 12 (May 3) International Institutions**

- Kydd *IRT*, Chapter 14.

**Additional Readings**


• Fey, Jo and Kenkel Critique of Chapman 07.


### 5 Domestic Politics and IR

**Week 13 (May 10) Audience Costs**

• Kydd *IRT*, Chapter 16.

**Additional Readings**


6 Additional Topics

1. Alliances and the Balance of Power


2. Democracy and War


3. Two Level Games


4. Mediation and Intervention


5. Empirical Implications of Theoretical Models


6. Reputation
