

---

## PS 681: INTERMEDIATE GAME THEORY. WINTER 2015

---

Arthur Lupia & Jason Davis

Lupia email: [lupia@umich.edu](mailto:lupia@umich.edu), phone: 647-7549, website: [www.arthurlupia.com](http://www.arthurlupia.com)

Class Time: Tuesday & Thursday 10:00-11:30. Room: 1006 Dana  
Section Time: Wednesday 12-1. Room: LSA 3156.

Office Hours: Lupia: Tuesday 2-4, 6757 Haven Hall.  
Davis: Wednesday 3-5 PM, 7730 Haven Hall.

### Primary Texts

- Nolan McCarty and Adam Meirowitz. 2007. *Political Game Theory: An Introduction*. Cambridge University Press. (Henceforth denoted MM)
- Eric Rasmusen. 2006. *Games and Information: An Introduction to Game Theory. Fourth Edition*. Blackwell Publishing Ltd. (Henceforth denoted RAS).

### Description

The purpose of this course is to train students to apply game theoretic methods to political science problems. Skill development will be evaluated through a series of problem sets and exams. Questions of research design and application will be addressed. Throughout the course, we will hold article-based workshops where we will use papers that I have written as a basis for discussions of how to (and how not to) integrate models into research designs. The main premise of this class is that you will learn more about game theory by doing it rather than simply reading about it. Students wishing to integrate game-theoretic research designs into their own research can use this course as a basis for fully engaging in the department's new advanced offerings in formal modeling.

**Prerequisite.** Political Science 598 or equivalent background is a prerequisite. Please review the mathematical appendices in both of the primary texts and be sure that you have a good working knowledge of the concepts contained in these appendices.

---

(Underlined classes occur during section time.).

### 1/7 INTRODUCTION and EXPECTATIONS

*Week 1: First Class held during Section Time. No Class on January 8.*

- RAS pp. 1-7.
- A Lupia. 2000. "The Public Value of Political Science: Information for Buyers and Sellers." *PS: Political Science and Politics* 33: 7-13.
- A Lupia. 2014. "What is the Value of Social Science? Challenges for Researchers and Government Funders." *PS: Political Science and Politics* 47: 1-7.
- A Lupia, C Elman. 2014. "Openness in Political Science: Data Access and Research Transparency." *PS: Political Science and Politics* 47: 19-42.

1/13

THE THEORY OF CHOICE.

MM Ch 1 and 2 (pp. 1-25).

- 1/15 CHOICE UNDER UNCERTAINTY MM Ch 3 (pp. 27-62).
- 1/20 SOCIAL CHOICE THEORY MM Ch 4 (pp. 66-85).
- 1/22\* JW Patty and EM Penn. 2011. "A Social Choice Theory of Legitimacy." *Social Choice and Welfare* 36: 365-382.
- 1/27, 29 NORMAL FORM GAMES RAS Ch 1-1.4 (pp. 9-31)
- 2/3, 5 NORMAL FORM BAYESIAN GAMES MM Ch 6 (pp. 150-69)
- 2/10, 11, 17 EXTENSIVE FORM GAMES RAS Ch 4 (pp. 108-127)
- 2/19\* A Lupia, LS Casey, KL Karl, S Piston, TJ Ryan, C Skovron. 2015. "What Does it Take to Reduce Racial Prejudice in Candidate-Level Evaluations: A Formal Theoretic Perspective." *Political Science Research and Methods* 3: 1-20.
- 2/24\* ER Gerber, A Lupia, and MD McCubbins. 2004. "When Does Government Limit the Impact of Voter Initiatives? The Politics of Implementation and Enforcement." *Journal of Politics* 66: 43-68.
- 2/26 MIDTERM EXAM
- BREAK**
- 3/10-12 DYNAMIC INC INFO GAMES RAS Ch 2, 6.1, 6.2, 7.1  
(pp. 40-69, 156-164, 181-184)
- 3/17\* "Busy Voters, Agenda Control, and the Power of Information." *American Political Science Review* 86: 390-403.
- 3/19 REPEATED GAMES MM Ch 9 (pp. 251-73)  
RAS Ch 5:1-3 (pp. 128-137)
- 3/24 BARGAINING THEORY MM Ch 10 (pp. 275-318)  
RAS Ch 12:1-5 (pp. 357-369)
- 3/26\* A Lupia and K Strom. 1995. "Coalition Termination and the Strategic Timing of Parliamentary Elections." *American Political Science Review* 89: 648-665.
- 3/31\* JD Fearon. 1998. "Bargaining, Enforcement, and International Cooperation." *International Organization* 52: 269-305.
- 4/2\* G Sin and A Lupia. 2013. "How the Senate and President Affect the Timing of Power-Sharing Rule Changes in the US House" *Journal of Law, Economics, and Organization* 29: 1184-1216.
- 4/7\* E Bueno de Mesquita. 2007. "Politics and the Suboptimal Provision of Counterterrorism." *International Organization* 61: 9-36.

4/9\* A Lupia and JO Menning. 2009. "When Can Politicians Scare Citizens into Supporting Bad Policies." *American Journal of Political Science* 53: 90-106.

4/14\* J Davis. 2014. "Protection as a Commitment Problem." University of Michigan Working Paper.

4/14, 15, 21 Student model proposals

### GRADING.

- Problem Sets: 9@ 5 points each.
  - Due at 5:00 pm one week after MM Chapter 2 is completed in class  
MM 2:1-3;  
Exercise 2.1 (alternate wording): Suppose that  $X$  is finite and  $R$  is a complete and reflexive binary relation on  $X$ . Prove that in this case,  $M(R,S)$  is not empty if and only if  $R$  is acyclic.
  - Due At 5:00pm one week after MM Chapter 3 is completed in class  
3:1,4,5 (focus on the two-period case)
  - Due At 5:00pm one week after MM Chapter 4 is completed in class  
4:1,4,5,7;
  - Due At 5:00pm one week after RAS Chapter 1 is completed in class  
1:2-12 (even)
  - Due At 5:00pm one week after MM Chapter 6 is completed in class  
6:1-5
  - Due At 5:00pm one week after RAS Chapter 4 is completed in class  
4:2,4
  - Due At 5:00pm one week after RAS Chapter 2 is completed in class  
2:2-8 (even)
  - Due At 5:00pm one week after RAS Chapter 5 is completed in class  
5: 2-8 (even)
  - Due At 5:00pm one week after RAS Chapter 12 is completed in class  
12:2-8
- Article Workshop\* 10@2 points each.
  - For each workshop, you must produce a report of 250-500 words that
    - Makes an attempt to explain the logic of one or more proofs AND/OR Makes an attempt to motivate an extension or alteration of the model that allows it to better serve a specific substantive purpose. This purpose may be the purpose stated by the paper's author or it may be an alternate purpose that you come up with.
    - The report is **due at 24 hours prior to the beginning of class** during which the article is being discussed. No extensions will be granted and reports submitted after this time will receive a grade of zero.
    - I will integrate the content of these reports into class discussions.
- Paper proposal: 5 points. Submit a 3-5 page prospectus on how you can use formal logic to advance a debate on a literature about which you care. You will have five minutes to present this idea to the class. Each presentation will be followed by a brief Q&A
- Midterm: 15 points.
- Final Exam: 15 points.