

Department of Political Science
University of California, Berkeley
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FORMAL MODELS IN POLITICAL SCIENCE II
PS232B

This course is a continuation of PS232A. It provides an introduction to the kinds of formal models used to study a wide range of topics in political science. The course will also generally cover these topics and models in greater technical detail than in PS232A. The main goals of the course are twofold. For those unlikely to be developing models in their own work but whose empirical (often experimental) work closely engages formal theory, the course should help them be better able to assess the strengths and weaknesses of a formal model. What are the key drivers of the formal results? To what extent are these “artifacts” of the formalization or seem to be tapping into a substantively important issue? For those who are likely to use formal work in their own research, this course provides a basis for beginning to develop one’s own models as well as a firmer foundation for taking additional courses.

Prerequisites: PS232A or the equivalent is required.

Course Requirements: Grades will be based on four to five problems sets as well as a *four* hour final distributed during finals week, Dec 10-14.

Required Texts: Steven Tadelis, *Game Theory: An Introduction* (Princeton, NJ: Princeton University Press, 2013). There will also be selected readings from other game-theory texts and papers.

There are now many game-theory texts ranging from non-technical introductions to quite mathematical texts. Assigning readings from a variety of texts is intended in part to help introduce you to several of them. A now standard and very thorough graduate text on microeconomics which covers some of the topics we will is Andreu Mas-Colell, Michael Whinston, and Jerry Green, *Microeconomic Theory* (New York: Oxford, 1995). Adam Meirowicz and Nolan McCarty, *Political Game Theory* (Princeton: Princeton University, 2007) is a graduate-level introduction to game theory developed in the context examples drawn from political science. David Austen-Smith and Jeffrey S. Banks, *Positive Political Theory I* (Ann Arbor: University of Michigan Press, 1999) provides an in-depth treatment of collective choice. Game theory texts in roughly the order from least mathematical to most are: Prajit K. Dutta, *Strategies and Games* (Cambridge: MIT Press, 1999); Martin Osborne, *An Introduction to Game Theory* (New York: Oxford University Press, 2003); Tadelis, *Game Theory: An Introduction*; Ariel Rubinstein and Martin Osborne, *A Course in Game Theory* (Cambridge: MIT Press, 1994); Meirowicz and

McCarty, *Political Game Theory*; Roger Myerson, *Game Theory* (Cambridge, Mass., Harvard University Press, 1991); and Drew Fudenberg and Jean Tirole, *Game Theory* (Cambridge, Mass., MIT Press, 1991).

Readings and Lectures

Aug 22: Introduction and Overview:

Tadelis, ch 19 and pp 117-23.

Aug 29: Costly Signaling:

Tadelis, chs 15-16.

Sept 5: Cheap Talk

Tadelis, ch 18.

Sept 12-19: Principle-Agent Problems:

Gailmard, Sean. 2014. "Accountability and Principal-Agent Theory," *The Oxford Handbook of Public Accountability*.

Moral Hazard:

Lorentzen, Peter. 2013. "Regularized Rioting," *Quarterly Journal of Political Science* 8:127-158.

Berman, Eli and David Lake. *Proxy Wars: Suppressing Transnational Violence through Local Agents*. Ithaca, NY: Cornell University Press, forthcoming. Read the introductory chapter.

Berman, Eli, David Lake, Padro i Miquel, and Pierre Yared. 2018. "Technical Appendix to "Introduction: Principles, Agents, and Indirect Foreign Policies."

Background: Padro i Miquel, Gerard and Pierre Yared. 2012. "The Political Economy of Indirect Control," *Quarterly Journal of Economics*. For background read pp. 947-59, 984-96.

Adverse Selection:

Tadelis, pp 258-61.

McCarty and Meirowicz, pp. 346-50.

^RGailmard, Sean and John Patty. 2013. *Learning While Governing*. Chicago, IL: University of Chicago Press.

Sept 26: Mechanism Design and the Revelation Principle

Tadelis, ch 14

Banks, Jeffrey. 1990. "Equilibrium Behavior in Crisis Bargaining Games," *American Journal of Political Science*, 34(3): pp. 599-614

Oct 3: Repeated Games:

Tadelis, pp. 209-14.

Fudenberg and Tirole, pp. 150-63.

Oct 10-17: Complete-Information Bargaining:

Tadelis, ch 11.

Models of Political Conflict in Weakly Institutionalized settings – the Inefficiency Puzzle.

Oct 24: Information Problems:

Fearon, James. 1995. "Rationalist Explanations for War," *International Organization*.

Powell, Robert. 1999. *In the Shadow of Power*, pp. 82-104.

Oct 31 – Nov 7: Commitment Problems, Stochastic Games, and Markov Perfect equilibria:

Mailath, George and Larry Samuelson. 2006. *Repeated Games and Reputations*, pp. 174-78.

Powell, Robert. 2006. "War as a Commitment Problem," *International Organization*, only pages 169-80.

Acemoglu, Daron and James Robinson. 2001. "Political Transitions," *American Economic Review*. (For a much more extensive discussion of the issue and extension of the model, see Acemoglu and Robinson's *The Economic Origins of Democracy*.)

- Fearon, James. 1995. "Why Do Some Civil Wars Last So Long?"
Journal of Peace Research.
- Powell, Robert. 2006. "Costly Conflict with Complete
Information," *American Political Science Review*.
- Krainin, Colin. 2017. "Preventive War as a Result of Long-Term
Shifts in Power," *Political Science Research and Methods*.

Nov 14: Dynamic Programming:

Readings:

- Sundaram, Rangarajan. 1996. *A First Course in Optimization
Theory*. (New York: Cambridge University Press), pp. 268-86,
(recommended: 287-308).

Nov 21: Thanks Giving

Nov 27: More applications:

Readings:

- Acemoglu, Daron and James Robinson. 2008. "Persistence of
Power, Elites and Institutions," *AER*: 267-93.