POLS 515: Applied Game Theory

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Office hours: Mon 9:30-11:30
in Tarbutton 334

Fall 2013
Class meets Fri 9-12
in Tarbutton 120A

Description

This course hones prior training by examining how techniques are used in formal political science research. Topics may include voting and elections, political institutions, regime transition/consolidation, principal agent models, bargaining, information/cheap talk, role of third parties and committees, deterrence, mechanism design, and endogenous state formation. Lectures and problem sets will emphasize solution concepts and modeling variations. Students will complete problem sets and assignments independently. Prerequisites are POLS 513 and 514.

Learning Objectives

Upon successful completion of this course, students can expect to have gained:

1. Exposure to canonical works.
2. Practice working through proofs, anticipating results, and teaching.
3. Develop and write up their own model.

What you will do (and grading)

I. Peer Instruction and "Participation" (35%)

Readings with an asterisk (*) are required. If we have time, we will discuss the other readings but students are not responsible for reading them before class.

For required reading, all students are required to work through the model (setup, notation, propositions, and proofs - step by step) before class. **Explicitly document** the following 4-step process (**this will be collected at random**):

1. Read the intro, literature review and conclusion. Write down a proposed model, game tree, figures, comparative statics you expect to see (write it down as exactly as you can imagine).

2. Read the model setup. Write down the basics: notation, explanations, and any derivations necessary to understand the proofs. Now write down a strategy of proof (How would you prove this? What will the best responses look like? Work out things that you think will happen?). Finally, write down any propositions and comparative statics you expect (write down the exact form as best you can). Note: Do not discuss how you would model things differently.

3. Read the propositions one-by-one and try to prove them (derive everything, work out every figure, draw extra figures as needed, calculate any expressions). Whether you solved it or not, work through the proofs in the appendix *their way* – follow each step to understand their techniques. Work through all the proofs in the paper (yes, this takes time, your document will not look pristine, and you may not be able to prove everything, but at the very least get through the logic of the main results).

4. Last, can you extend their results? Derive other comparative statics? Do it, plot them, and figure out what this adds substantively.

One student will give a chalk talk based on their notes: provide the main question, present the model (include proper notation, explain why things were modeled in this way), and take the class through the proofs of the main results (include all derivations). All students should be equally prepared with notes from the above process even if they are not this week's presenter. Students will help each other fill in the blanks and work through each paper in class. Expect to be called on and expect to be asked new questions during class. *It's difficult, but it will get easier!*

II. Problem Sets (45%)

Problem sets are for practice. Do your best, work through the problems on your own, write full proofs and explanations. Consult notes, textbooks, etc. **All work is to be done independently. Do NOT collaborate with anyone.**

III. Research Project (20%)

Final paper is to be double-spaced, written in 12-point font, and yes, use LaTeX.

1. Model development day: Present the actors, strategies, preferences, and sequence of moves to the class. Aim for the *simplest* model possible to make your point. We'll discuss it to provide you with feedback.

2. Model solutions day: Present the equilibrium and results.

3. Submit a a formal write up of the model, all equilibria, formal proposition statements, comparative statics, game tree(s), and figures, etc. along with a discussion of the results. This is essentially the Model, Results/Discussion, and Appendix of a paper. Due date: TBA.

Suggestions and Resources

`Math review resources:`

- Thompson's A Guide for Young Economists (learn to write a proof and set up a model, intuitively)
- Cupillari's The Nuts and Bolts of Proofs (intro text on proving things)
- Krantz's Real Analysis and Foundations (confused about sets, sequences, topology, continuity, integration?)
- Simon and Blume's Mathematics for Economists (ditto)
- Sundaram's 1st Course in Optimization Theory (optimization, optimized.)

`Game theory resources:`

1. Fudenberg and Tirole (technical, but thorough)
2. Osborne and Rubinstein's A Course in Game Theory (a little technical, but compact and useful)
3. Osborne's Intro to Game Theory (less technical with some fun problems)

`Other resources:`

1. Emory Office of Disability Services: Students who would like special allowances for things like extra time on exams must see the ODS for preapproval. `http://www.ods.emory.edu/about.htm`
2. Stay healthy: `http://studenthealth.emory.edu/`
3. Manage your work and life: `http://www.worklife.emory.edu/`

Policies

1. **Absences, Late Assignments and Incompletes:**
   * You are allowed one absence (excused or not) without penalty. Each additional absence is 5 points off of your final course grade.
   * Late assignments drop a full letter grade – A to B, B to C – per day late *without exception.*
   * No incomplete will be given for this class.

2. **Academic Integrity:**
   All assignments submitted by a student must be that student's own original work. There are many forms of academic dishonesty, which include, but are not limited to: cheating, plagiarism, false citations, creating or using fraudulent records or official documents, and aiding another person in their academic dishonesty. No form of academic dishonesty will be tolerated. Any case of suspected academic dishonesty will be reported and managed according to university rules as per the Emory Honor Code:
   `http://catalog.college.emory.edu/academic/policy/honor_code.html`.
   Please speak with the professor if you have any questions or concerns.

3. **Electronics:**
   * Tablets, laptops are unnecessary – writing by hand is much faster.
   * Cell phone use is not permitted during class.

Schedule

Jan 17: Intro (Developing Intuition about Democracy)
Note: No required reading

- Downs 1957
- Besley and Coate 1997 "An Economic Model of Representative Democracy"

Jan 24: Politicians and Elections

- *Ferejohn 1986 "Incumbent Performance and Electoral Control"
- Gordon, Huber and Landa 2007 "Strategic Challenger Entry and Voter Learning"

Jan 31: A Role for Committees and Third-Parties – Agenda-Setting and Delegation

- *Gilligan and Krehbiel 1987 "Collective Decisionmaking and Standing Committees: An Informational Rationale for Restrictive Amendment Procedures"
- Bendor and Mierowitz 2004 "Spatial Models of Delegation"

Feb 7: Principal-Agent Models, Agenda-Setting (Third Parties) vs. The Median Voter

- *Romer and Rosenthal 1978 "Political Resource Allocation, Controlled Agendas, and the Status Quo"

Feb 14: Model development day

- Present the actors, strategies, preferences, and sequence of moves to the class. Aim for the *simplest* model possible to make your point. We'll discuss it to provide feedback.
- Problem set 1 due

Feb 21: Information, Cheap Talk, and Bargaining

- *Baron and Ferejohn 1989 "Bargaining in Legislatures"
- Crawford and Sobel 1982 "Strategic Information Transmission"
- Kydd 2003 "Which Side Are You On? Bias, Credibility, and Mediation"

Feb 28: Voters, Elections, and Policy

- *Austen-Smith & Banks 1988 "Elections, Coalitions, and Legislative Outcomes"
- Ramsay 2004 "Politics at the Water's Edge: Crisis Bargaining and Electoral Competition"

Mar 7? Political Institutions and Mechanism Design I (Democratic)

- Conflict with Public Choice Society conference. We'll reschedule class for sometime between March 3 (M) - March 5 (W).
- *Maskin and Tirole 2004 "The Politician and the Judge: Accountability in Government"

Mar 14: Spring Break

Mar 21: Political Institutions and Mechanism Design II (Authoritarian)

- *Svolik 2009 "Power Sharing and Leadership Dynamics in Authoritarian Regimes"
- Problem set 2 due

Mar 28/April 4? Model Solutions Day (Alternate Schedule)

- Conflict with MPSA and ISA conferences. We'll reschedule Model Solutions Day for sometime between March 31 (M) - April 2 (W).

Apr 11: Violence and Bargaining

- *Fearon 1995 "Rationalist Explanations for War"

- EBDM 2005 "Conciliation, counterterrorism, and patterns of terrorist violence"

Apr 18: Violence and Redistribution

- *Acemoglu and Robinson ch 4 and 5 from Economic Origins of Dictatorship and Democracy
- Dal Bo and Powell 2009 "A Model of Spoils Politics"

Apr 25: Regime Transitions, State Formation and Failure

- *Acemoglu and Robinson 2001 "A Theory of Political Transitions"
- Besley and Persson "The Origins of State Capacity: Property Rights, Taxation, and Politics"
- Problem set 3 due