

PSC 408: POSITIVE POLITICAL THEORY

SPRING 2009
MW 11:05-12:20pm
HARKNESS 329

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Hours: T 1:30-3:30pm

This course is part of a rigorous introduction to the main concepts and results in positive political theory. It is the second half of a two course sequence consisting of PSC 407 and PSC 408. The sequence concentrates on the theoretical models used in contemporary political science, and provides the mathematical background necessary to fully understand them. The year-long sequence of PSC 407 and PSC 408 is designed to be both a rigorous foundation for students planning on taking further courses in the positive political theory field and a self-contained overview of the field for students who do not intend to do additional coursework in the field.

The bulk of this course will focus on the basics of game theory, which analyzes individual behavior in strategic situations. It will also cover the mathematical tools required to express the theory. Examples and applications will be drawn from several different areas in political science, including the American Congress, voting, international relations, political economy, and law. Naturally, PSC 407 is the prerequisite for this course. Students should have a good working knowledge of the mathematical topics covered there.

Course Meetings: Lectures for the course will be Mondays and Wednesdays at 11:05 in Harkness 329.

Course Work: There will be a number of problem sets assigned roughly every other week. There will also be a midterm and final exam.

Course Readings: I will make use of two of the books that were used in PSC 407:

- Simon and Blume, *Mathematics for Economists*, and

- Ordeshook, Game Theory and Political Theory.

There is one required text for the course:

- Osborne, An Introduction to Game Theory.

Additional readings will be distributed during the semester.

Schedule: Below is the list of topics and the scheduled readings for the course. Naturally, this schedule may change as the semester unfolds.

TOPIC 0 OVERVIEW AND LOGISTICS OF THE COURSE

TOPIC 1 CONSTRAINED OPTIMIZATION

Local and global, first and second order necessary conditions, sufficient conditions, constrained optimization and Lagrange's method, comparative statics.

- Simon and Blume, chs. 17-19, 21.5.

TOPIC 2 EXPECTED UTILITY

Lotteries, expected utility, risk aversion, paradoxes, turnout.

- Ordeshook, sec. 1.5-1.7,
- Simon and Blume, appendix A5,
- Osborne, appendix 4.12.

TOPIC 3 STRATEGIC FORM GAMES

Weak and strong dominance, IEDS, pure strategy Nash equilibrium, mixed strategies, zero-sum games, continuous strategy spaces.

- Osborne, chs. 2-4,
- Ordeshook, sec. 3.5, 3.6, 3.8, 4.1-4.3.

TOPIC 4 ELECTORAL COMPETITION

Convergence, Candidate Motivations and Uncertainty.

- Osborne, chs. 3.4.
- Ordeshook, ch. 4.

TOPIC 5 COLLECTIVE ACTION

Collective action, Public Goods, Participation.

- Osborne, chs. 4.8,
- Ordeshook, ch. 5.

TOPIC 6 EXTENSIVE FORM GAMES

Strategies in the extensive form, information sets, backward induction, subgame perfection, credible threats.

- Osborne, chs. 5-7,
- Ordeshook, secs. 3.1-3.3, 3.7, 3.9, 6.4.

TOPIC 7 VOTING MODELS

Strategic voting, issue-by-issue, Vote Buying, Setter model.

- Osborne, secs. 6.1,6.3,7.3,7.4.
- Ordeshook, secs. 6.1-6.3.

TOPIC 8 BARGAINING

Alternating Offers, Nash Bargaining, Bargaining in Legislatures.

- Osborne, chs. 16.

- Nash, 1951, *Econometrica*,
- Rubinstein, 1982, *Econometrica*,
- Baron and Ferejohn, 1989, *APSR*.

TOPIC 9 REPEATED GAMES

Cooperation in the Prisoners' Dilemma, Folk Theorems.

- Osborne, chs. 14-15.