PSC 533: Formal Political Theory
Department of Political Science
University at Buffalo
Fall 2017

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Office Hours:
To be announced in-class

Description:
This course provides an introduction to formal models in political scientists. Special attention is
given to rational choice models, especially game-theoretic models, and the public choice
literature. Throughout, the emphasis will be on the spirit of modeling rather than on proofs and
specific modeling techniques.

Required Texts:
Michael E. Brown, Owen R. Coté, Jr., Sean M. Lynn-Jones, and Steven E. Miller, eds., Rational

James D. Morrow, Game Theory for Political Scientists, Princeton, NJ: Princeton University

Philip Straffin, Game Theory and Strategy. Washington, DC: Mathematical Society of America,
1995.

Frank C. Zagare and D. Marc Kilgour, Perfect Deterrence. New York: Cambridge University

Recommended/Suggested:

Evelyn C. Fink, Scott Gates and Brian Humes, Game Theory Topics: Incomplete Information,


Requirements:

There will be two in-class examinations, based on the readings and the lectures. The dates will be announced in class. Each examination will count for 30% of the final grade.

In addition, each student is expected to write a paper that either 1) develops, extends, or applies a game- or decision-theoretic model, or 2) explores in detail a more specialized topic directly related to the subject matter of the course. Some suggested topics may be given in class. Students are urged to approach this assignment from the vantage point of their particular research interests and future dissertation plans. Each student will present the substance of his or her paper in class at the end of the semester. The paper, and its presentation, will count for 30% of the final grade. Papers handed in later than December 1, 2018 will not be graded.

There will also be some homework assignments and other small projects. These assignments, along with classroom participation, will count for the remaining 10% of the final grade.

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<th>Learning Outcome</th>
<th>Assessment Measures:</th>
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<tr>
<td>Be able to identify, discuss, and apply key concepts and major approaches in game theory</td>
<td>Participation in class discussion</td>
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<td>Term Paper; Final exam</td>
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<td>Demonstrate the ability to think theoretically about politics</td>
<td>Literature review</td>
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Academic misconduct: Academic misconduct will not be tolerated in this course. A student with a documented case of plagiarism, cheating, or another form of academic dishonesty will receive the grade of “F” for the course and might face other disciplinary action under University regulations.

Students with disabilities policy: The Americans with Disabilities Act (ADA) is a federal statute that provides comprehensive civil rights protection for persons with disabilities. This legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring accommodation, please notify me immediately.

Intellectual Property: Course materials that I (Frank C. Zagare) have prepared, together with the content of all lectures and materials presented and prepared by me in this course are my intellectual property. Video, audio, and photographic recording of lectures is prohibited without my explicit permission. The selling or dissemination of exams, study guides, homework assignments and handouts is prohibited without my explicit permission. The selling or dissemination for commercial purposes of notes derived from my lectures is also prohibited without my explicit permission.
The following is a chronological list of topics and suggested readings for these topics.

I. Introduction

Brown et al., entire book
Morrow, Chapter 1; pp. 16 – 22.
Baird et al., Introduction (recommended)
Morton, Chapters 1 – 3 (recommended)
Zagare and Kilgour, pp. 37 – 44
*“The Game Theorist”

II. Representing Games: The Extensive Form and Normal Form

Morrow, Chapter 3
Baird et al., Chapters 1 and 2 (recommended)
Zagare and Kilgour, pp. 65 – 86
*“Extensive Form of Asymmetric Escalation Game”
Homework: Morrow, Exercises 3.1, 3.2, 3.3, 3.4, and 3.5

III. Two-Person Zero-Sum Games

Morrow, pp. 73 – 91;
Homework: 2 and 3
Homework: Morrow, Exercises 4.3, 4.4, and 4.5

IV. Introduction to Utility Theory

Morrow, Chapter 2

V. Two-Person Nonzero-Sum Noncooperative Games

Morrow, pp. 91 – 111
Baird et al., Chapters 4 – 6 (recommended)
Poundstone, entire book (recommended)
Homework: Morrow, Exercises 4.1, 4.2, and 4.6
*“Game Theory Wins a Nobel”

VI. Backward Induction and Subgame Perfection

Morrow, Chapter 5
Zagare and Kilgour, Sections 2.2, 3.2 and 3.3
VII. The Theory of Metagames and the Analysis of Options Technique

Straffin, pp. 76 – 78.

VIII. Repeated Games and Evolutionary Stable Strategies

Morrow, Chapter 9
*“The Importance of Being Nice”

IX. The Theory of Moves


X. Games with Incomplete Information

Morrow, Chapters 6 - 8
Zagare and Kilgour, entire book, but especially Chapters 1 – 5, and 10
Baird et al., Chapter 3
Fink, Gates and Humes, entire book (recommended)

XI. Voting Games

Morrow, pp. 133 – 138
*Homework 4
XII. Two-Person Nonzero-Sum Cooperative Games

Morrow, pp. 111 – 116
Baird et al., Chapters 7 – 9 (recommended)
* “Harvard is Lone Bidder”

XIII. Introduction to N-person Games

Morrow, pp. 116 – 120

XIV. Theory of Political Coalitions

*“The Rochester School”

XV. Measuring Power

To be assigned

XVI. Conclusions

Morrow, Chapter 10

# = available at: http://www.jstor.org/
* = available at: http://www.acsu.buffalo.edu/~fczagare/GameTheoryHome.htm