Econ 241 Game Theory

TTh 9:45-11:00 am

Baxter 311

Prof. Joyce Burnette

Office: Baxter 121

Office Hours: You are welcome to stop in anytime.

Office Phone: 361-6073 E-mail: burnettj@wabash.edu

Game theory analyzes strategic behavior. What happens when my decisions affect outcomes for others and when the decisions of others affect my outcomes? This type of analysis is useful in many areas including, but not limited to, economics, political science, and biology. This class will introduce you to the basic concepts of game theory and explore some applications of these concepts.

The textbook for this class is:

Avinash Dixit, Susan Skeath, and David Reiley, Games of Strategy, 4th ed., Norton, 2015

In addition to the textbook the following supplementary readings are available on Canvas:

Michael Shermer, "The Doping Dilemma" Scientific American, April 2008, 298:82–89.

Joseph Henrich, "Does Culture Matter in Economic Behavior? Ultimatum Game Bargaining Among the Machiguenga of the Peruvian Amazon," *American Economic Review*, Sept. 2000, 90:973–979.

Lisa Cameron, "Raising the States in the Ultimatum Game: Experimental Evidence from Indonesia," *Economic Inquiry*, Jan. 1999, 37:47–59.

Richard Thaler, "Anomalies: The Ultimatum Game," *Journal of Economic Perspectives*, Autumn 1988, vol. 2, no. 4, pp. 195-206.

Richard Thaler, "Anomalies: Cooperation,: *Journal of Economic Perspectives*, Summer 1988, vol. 2, no. 3, pp. 187-197.

Ernst Fehr and Simon Gachter, "Cooperation and Punishment in Public Goods Experiments," *American Economic Review*, Sept. 2000, 90:980–994.

Richard Thaler, "Anomalies: The Winner's Curse," *Journal of Economic Perspectives*, Winter 1988, vol. 2, no. 1, pp. 191-202.

Ernst Fehr and Urs Fishbacher, "The Economics of Strong Reciprocity," in Gintis, Bowles, Boyd, and Fehr, *Moral Sentiments and Material Interest*, MIT Press, 2005

Grading: Your grade will be a weighted average of the following items:

Two Exams	20% each	Homework	12%
Final Exam	22%	Group Project/Presentation	10%
Quizzes	10%	Attendance/Participation	6%

Homework: To help you keep up with the material, I will assign daily homework. Expect 3 or 4 problems per day, due at the beginning of the next class.

Late homeworks will receive half credit. No homeworks will be accepted after the last day of class.

Quizzes: There will be a brief quiz at the end of class each Thursday. There are two reasons for having such frequent quizzes. First, the quizzes provide an incentive to keep up with the material. Second, the quizzes actually help you learn. Here's what cognitive scientists say about learning: "One of the most striking research findings is the power of active retrieval – testing— to strengthen memory, and that the more effortful the retrieval, the stronger the benefit."

_

¹ P. Brown, H. Roediger, and M. McDaniel, *Make it Stick: The Science of Successful Learning*, Belknap 2014, p. 19.

Group Project: You will work in groups of three students. Your task is to take a "real-life" situation, model it as a game, and apply the solution concepts learned in this class. The "real-life" situation may come from a movie or book, or from an actual historical instance. Your group will produce a short paper (4-6 pages) and present your game to the class.

Schedule:

Jan. 17	Date	Event	Topic	Reading
Equilibrium, Dominance		2,011		
Prisoner's Dilemma, 3 players	oun. 17			Ch. 2.1 2.1
Motivation in Prisoner's Dilemma" Chardination Ch. 4.6-4.7	19			Ch 41–45
Dilemma; Coordination				
Best Response Functions, Critiques of Nash Equilibrium				
Critiques of Nash Equilibrium	26			
Extensive Form Games Ch. 3	-			
Feb. 2 Experimental Evidence; The Ultimatum Game Economic Behavior?"; Cameron, "Raising the Stakes" 7 The Ultimatum Game Thaler, "The Ultimatum Game" 9 Order of Play; Nature Ch. 6 14 Applications 16 TEST ONE 21 Mixed Strategies Ch. 7.6–7.9 28 Signaling Ch. 8.2–8.4 Mar. 2 Signaling Ch. 8.5–8.6 SPRING BREAK 14 Threats and Credibility Ch. 9 16 Brinkmanship Ch. 10 21 Repeated Prisoner's Dilemma Ch. 10 22 Public Goods Ch. 11 23 Public Goods Experiments; Auctions Test TWO Apr. 4 Public Goods Experiments; Auctions Thaler, "Cooperation and Punishment in Public Goods Experiments" 6 Auctions Thaler, "The Winner's Curse"; Ch. 16 11 Presentations 13 Presentations 14 Evolution Ch. 12.1-12.4 26 Evolution Ch. 15 7 Febr and Fischbacher, "The Economics of Strong Reciprocity"	31			Ch. 3
Ultimatum Game Economic Behavior?"; Cameron, "Raising the Stakes" The Ultimatum Game Thaler, "The Ultimatum Game" Order of Play; Nature Ch. 6 Applications TEST ONE Mixed Strategies Ch. 7.1–7.5 Mixed Strategies Ch. 8.2–8.4 Signaling Ch. 8.5–8.6 SPRING BREAK Threats and Credibility Ch. 9 Brinkmanship Ch. 14 Repeated Prisoner's Dilemma Ch. 10 Repeated Prisoner's Dilemma Ch. 11 Repeated Prisoner's Dilemma Ch. 11 Repeated Prisoner's Dilemma Ch. 10 Apr. 4 Public Goods Ch. 11 Apr. 4 Public Goods Experiments; Auctions Fehr and Gachter, "Cooperation and Punishment in Public Goods Experiments" Auctions Thaler, "The Winner's Curse"; Ch. 16 Presentations Thaler, "The Winner's Curse"; Ch. 16 Presentations Ch. 12.1-12.4 OEVOLUTION Ch. 12.5-12.8 Fehr and Fischbacher, "The Economics of Strong Reciprocity"	Feb. 2			Henrich, "Does Culture Matter in
The Ultimatum Game				· · · · · · · · · · · · · · · · · · ·
9 Order of Play; Nature Ch. 6 14 Applications 16 TEST ONE 21 Mixed Strategies Ch. 7.1–7.5 23 Mixed Strategies Ch. 7.6–7.9 28 Signaling Ch. 8.2–8.4 Mar. 2 Signaling Ch. 8.5-8.6 SPRING BREAK 14 Threats and Credibility Ch. 9 16 Brinkmanship Ch. 14 21 Repeated Prisoner's Dilemma Ch. 10 23 Public Goods Ch. 11 28 Cooperation and Public Goods Thaler, "Cooperation" 30 TEST TWO Thaler, "Cooperation" Apr. 4 Public Goods Experiments; Auctions Fehr and Gachter, "Cooperation and Punishment in Public Goods Experiments" 6 Auctions Thaler, "The Winner's Curse"; Ch. 16 11 Presentations Thaler, "The Winner's Curse"; Ch. 16 18 Evolution Ch. 12.1-12.4 20 Evolution Ch. 12.5-12.8 25 Voting Ch. 15				
Applications TEST ONE	7		The Ultimatum Game	Thaler, "The Ultimatum Game"
Applications TEST ONE	9		Order of Play; Nature	Ch. 6
21 Mixed Strategies Ch. 7.1–7.5 23 Mixed Strategies Ch. 7.6–7.9 28 Signaling Ch. 8.2–8.4 Mar. 2 Signaling Ch. 8.5-8.6 SPRING BREAK 14 Threats and Credibility Ch. 9 16 Brinkmanship Ch. 14 21 Repeated Prisoner's Dilemma Ch. 10 23 Public Goods Ch. 11 28 Cooperation and Public Goods Thaler, "Cooperation" 30 TEST TWO Fehr and Gachter, "Cooperation and Punishment in Public Goods Experiments" 6 Auctions Thaler, "The Winner's Curse"; Ch. 16 11 Presentations Thaler, "The Winner's Curse"; Ch. 16 13 Presentations Evolution Ch. 12.1-12.4 20 Evolution Ch. 12.5-12.8 25 Voting Ch. 15 27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity"	14			
23 Mixed Strategies Ch. 7.6–7.9 28 Signaling Ch. 8.2–8.4 Mar. 2 Signaling Ch. 8.5-8.6 SPRING BREAK 14 Threats and Credibility Ch. 9 16 Brinkmanship Ch. 14 21 Repeated Prisoner's Dilemma Ch. 10 23 Public Goods Ch. 11 28 Cooperation and Public Goods Thaler, "Cooperation" 30 TEST TWO Auctions Apr. 4 Public Goods Experiments; Auctions Fehr and Gachter, "Cooperation and Punishment in Public Goods Experiments" 6 Auctions Thaler, "The Winner's Curse"; Ch. 16 11 Presentations Thaler, "The Winner's Curse"; Ch. 16 18 Evolution Ch. 12.1-12.4 20 Evolution Ch. 12.5-12.8 25 Voting Ch. 15 27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity"	16	TEST ONE		
Signaling Ch. 8.2–8.4	21		Mixed Strategies	Ch. 7.1–7.5
Mar. 2SignalingCh. 8.5-8.6SPRING BREAK14Threats and CredibilityCh. 916BrinkmanshipCh. 1421Repeated Prisoner's DilemmaCh. 1023Public GoodsCh. 1128Cooperation and Public GoodsThaler, "Cooperation"30TEST TWOFehr and Gachter, "Cooperation and Punishment in Public Goods Experiments"6AuctionsThaler, "The Winner's Curse"; Ch. 1611PresentationsThaler, "The Winner's Curse"; Ch. 1613PresentationsCh. 12.1-12.420EvolutionCh. 12.5-12.825VotingCh. 1527ReciprocityFehr and Fischbacher, "The Economics of Strong Reciprocity"	23		Mixed Strategies	Ch. 7.6–7.9
SPRING BREAK 14 Threats and Credibility Ch. 9 16 Brinkmanship Ch. 14 21 Repeated Prisoner's Dilemma Ch. 10 23 Public Goods Ch. 11 28 Cooperation and Public Goods Thaler, "Cooperation" 30 TEST TWO Apr. 4 Public Goods Experiments; Fehr and Gachter, "Cooperation and Punishment in Public Goods Experiments" 6 Auctions Thaler, "The Winner's Curse"; Ch. 16 11 Presentations 13 Presentations 14 Evolution Ch. 12.1-12.4 20 Evolution Ch. 12.5-12.8 25 Voting Ch. 15 27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity"	28		Signaling	Ch. 8.2–8.4
14Threats and CredibilityCh. 916BrinkmanshipCh. 1421Repeated Prisoner's DilemmaCh. 1023Public GoodsCh. 1128Cooperation and Public GoodsThaler, "Cooperation"30TEST TWOFehr and Gachter, "Cooperation and Punishment in Public Goods Experiments"6AuctionsThaler, "The Winner's Curse"; Ch. 1611PresentationsThaler, "The Winner's Curse"; Ch. 1613PresentationsCh. 12.1-12.420EvolutionCh. 12.5-12.825VotingCh. 1527ReciprocityFehr and Fischbacher, "The Economics of Strong Reciprocity"	Mar. 2		Signaling	Ch. 8.5-8.6
Brinkmanship Ch. 14			SPRING BREA	K
Repeated Prisoner's Dilemma Ch. 10	14		Threats and Credibility	Ch. 9
Public Goods Ch. 11	16		Brinkmanship	Ch. 14
Cooperation and Public Goods Thaler, "Cooperation"	21		Repeated Prisoner's Dilemma	Ch. 10
Apr. 4 Public Goods Experiments; Fehr and Gachter, "Cooperation and Punishment in Public Goods Experiments" Auctions Thaler, "The Winner's Curse"; Ch. 16 Presentations Ch. 12.1-12.4 Evolution Ch. 12.5-12.8 Voting Ch. 15 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity"	23		Public Goods	Ch. 11
Apr. 4 Public Goods Experiments; Auctions Fehr and Gachter, "Cooperation and Punishment in Public Goods Experiments" 6 Auctions Thaler, "The Winner's Curse"; Ch. 16 11 Presentations 13 Presentations 18 Evolution Ch. 12.1-12.4 20 Evolution Ch. 12.5-12.8 25 Voting Ch. 15 27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity"	28		Cooperation and Public Goods	Thaler, "Cooperation"
Auctions Punishment in Public Goods Experiments" Auctions Thaler, "The Winner's Curse"; Ch. 16 Presentations Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity"	30	TEST TWO		
Interpretation of the presentation of the p	Apr. 4			
Interpretation of the presentation of the p	6		Auctions	Thaler "The Winner's Curse":
11Presentations13Presentations18EvolutionCh. 12.1-12.420EvolutionCh. 12.5-12.825VotingCh. 1527ReciprocityFehr and Fischbacher, "The Economics of Strong Reciprocity"May 4FINAL	•			
13 Presentations 18 Evolution Ch. 12.1-12.4 20 Evolution Ch. 12.5-12.8 25 Voting Ch. 15 27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity" May 4 FINAL	11	Presentations		5
18EvolutionCh. 12.1-12.420EvolutionCh. 12.5-12.825VotingCh. 1527ReciprocityFehr and Fischbacher, "The Economics of Strong Reciprocity"May 4FINAL				
20 Evolution Ch. 12.5-12.8 25 Voting Ch. 15 27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity" May 4 FINAL			Evolution	Ch. 12.1-12.4
25 Voting Ch. 15 27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity" May 4 FINAL				
27 Reciprocity Fehr and Fischbacher, "The Economics of Strong Reciprocity" May 4 FINAL				
May 4 FINAL Strong Reciprocity"				
May 4 FINAL				
	Mav 4	FINAL		<u> </u>
7.00 am	J	9:00 am		