

Economics 212 – Game Theory
Spring 2019
Professor Steven Matthews
University of Pennsylvania

Description. The object of game theory is to understand situations in which a person's behavior affects the optimal behavior of others. In this course we study the theory and its applications to economics, political science, and law.

Prerequisites. Econ 101 and Math 114/115, in a previous semester.

Class Times. Tuesday/Thursday, 10:30-12 noon in PCPE 200.

Professor. Steven Matthews, stevenma@econ.upenn.edu.

Teaching Assistant. Pedro Brandao Solti, solti@sas.upenn.edu.

Professor Office Hours. Wednesdays, 3:30-5 pm, PCPE 618. By appt otherwise.

TA Office Hours. Mondays, 1-3 pm, PCPE 500.

Textbook. *Strategy: An Introduction to Game Theory*, 3rd edition, by Joel Watson.

Course Materials. Lecture slides, supplementary readings, and solutions will be posted on <http://canvas.upenn.edu>.

Homework. There are six problem sets planned. They will be graded on a 1-3 scale. Only two problems from each set, chosen randomly, will be graded. Late homework is not graded. The problem set on which you score the lowest is not counted. Doing the homework is necessary for learning the material and doing well on the exams.

Exams. Three non-cumulative midterms, taken in class. All are closed book, notes, and electronics.

Grading. 10% for homework, 30% for each midterm. If you are unable to take one of the first two midterms for an *excused* reason, the other two will each count 45%. If you are unable to take midterm 3 for an *excused* reason, you will take a 30-45 minute oral exam in my office. The definition of an excused absence, departmental regrade policies, and so on can be found at <https://economics.sas.upenn.edu/undergraduate/course-information/course-policies>.

Dates of Problem Sets and Exams

PS 1	due Tuesday 1/29
PS 2	due Thursday 2/7
Midterm 1	in class, Thursday 2/14
PS 3	due Thursday 2/28
PS 4	due Tuesday 3/19
Midterm 2	in class, Thursday 3/28
PS 5	due Thursday 4/11
PS 6	due Tuesday 4/23
Final Exam	in class, Tuesday 4/30

Tentative Course Outline

Topic	Chapter	Lecture Slides
Representing Games		
Extensive form, strategies	1 – 3	1 – 2
Normal form, beliefs/mixed strategies	4, 5	3
Static Games		
Best response, rationalizability, applications	6 – 8	4 – 5
Equilibrium, applications	9, 10	6
Mixed strategy equilibrium	11	7
Strictly competitive games	12	8
Contract and law	13	9
MIDTERM 1		
Dynamic Games		
Extensive forms and subgame perfection	14, 15	10
Applications: IO and parlor games	16, 17	11
Bargaining games	19	12
Repeated games and applications	22, 23	13
MIDTERM 2		
Incomplete Information Games		
Random events and incomplete information	24, App A	14
Bayesian-Nash equilibrium, applications	26, 27	14 – 15
PBE, signaling, reputation	28, 29	14 – 15
Risk and Incentives (Moral Hazard)	25	
Chapters Tentatively Skipped: 18, 20, 21		