Economics 5960/6960

Game Theory - Fall 2014
3 Credits

General Information[1]

Prerequisites: Econ 4010
Time: Mondays and Wednesdays from 3:00-4:20 p.m.
Location: OSH 104

Instructor: Eric Sjöberg
E-mail: eric.sjoberg@economics.utah.edu
Office Hours: Thursdays 9.00 AM - 10.00 AM or by appointment
Location: OSH 374

Course Overview

In this course, we will learn how to use game theory as a tool to study interactions among strategic decision makers. We will start with the foundations of game theory and then study a variety of different topics such as sequential and repeated games, games of incomplete information (Bayesian games), contest modeling, mechanism design, the history of game theory and evolutionary game theory. We will throughout the course try to highlight how game theory can (and has) influence(d) public policy.

Course Objectives

After the completing this course you will

- Be able to take conflicts or problems from your everyday life, history, nature or society and interpret them in game theory terms.

- Solve games beyond the most basic models involving, for example incomplete and asymmetric information, sequential games and repeated games.

- Have a thorough knowledge of the equilibrium concept in economics and how the simple Nash Equilibrium can be amended to apply to more complex games.

- Know the modern history of game theory and how it has evolved.

- Give an account of how game theory influences policy and decision making.

Required Texts

Dutta, P.K., "Strategies and Games: Theory and Practice" MIT Press (most recent edition)

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[1]This syllabus is meant to serve as an outline and guide for the course. Please note that it may be modified at any time with reasonable notice to students. The schedule might also be modified at any time to accommodate the needs of the class. Should you have any questions or concerns about the syllabus, please contact me for clarifications.

Teaching and Learning Methods

The course will be based on in-class lectures. We will go through theory and I will demonstrate how to apply the techniques that we learn in practice. We will also have discussions, where active participation is encouraged, of how game theory can be applied and how the solutions to different problems are affected by the assumptions we make. Advance reading is encouraged and there will be a system for students to get credit (10% of the final grade) for doing this. There will be roughly seven assignments, one midterm and one final exam.

Computers and Software

You need to access Canvas for assignments, lecture notes and notifications.

Policies

You should speak with me in advance to request special consideration in the case of some extenuating circumstance that prevents you from taking an exam or submitting an assignment at the scheduled time. Consistent attendance is strongly recommended but attendance is not taken. Note that the midterm takes place on the last class before fall break.

Grading Policies

Evaluation will be based on the following.

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Evaluation

Activity	Grade Weighting
Active reading	10%
Assignments	35%
Midterm Exam	25%
Final Exam	30%

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Grading Scale

Grade	Score (s)			
A	0.92	$\geq$	s	
A$^-$	0.9	$\geq$	s $<$	0.92
B$^+$	0.88	$\geq$	s $<$	0.9
B	0.82	$\geq$	s $<$	0.88
B$^-$	0.8	$\geq$	s $<$	0.82
C$^+$	0.75	$\geq$	s $<$	0.80
C	0.70	$\geq$	s $<$	0.75
C$^-$	0.65	$\geq$	s $<$	0.70
D$^+$	0.63	$\geq$	s $<$	0.65
D	0.57	$\geq$	s $<$	0.63
D$^-$	0.55	$\geq$	s $<$	0.57
E			s $<$	55

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Students with disabilities

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

Wellness Statement

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness; www.wellness.utah.edu; 801-581-7776.

Tentative Schedule

A more comprehensive reading list will be available at the first lecture.

Week	Mon	Wed	Chapter(s), topic	Note
1	8/25	8/27	Introduction Ch.1, Ch.3-4	
2		9/3	Introduction Ch.1, Ch.3-4	Assignment 1 9/4
3	9/8	9/10	Nash Equilibrium Ch.5-Ch.7	
4	9/15	9/17	Nash Equilibrium Ch.5-Ch.7	Assignment 2 9/18
5	9/22	9/24	Mixed Strategies Ch.8 and Ch.9	
6	9/29	10/1	Mixed Strategies Ch.8 and Ch.9	Assignment 3 10/2
7	10/6	10/8	Review and Midterm	
8				Fall Break
9	10/20	10/22	Extensive Form Games Ch.11-Ch.13	
10	10/27	10/29	Extensive Form Games Ch.11-Ch.13	Assignment 5 10/30
11	11/3	11/5	Repeated Games Ch.14-Ch.17	
12	11/10	11/12	Repeated Games Ch.14-Ch.17	Assignment 6 11/13
13	11/17	11/19	Asymmetric and Incomplete information Ch.19-Ch. 20.	
14	11/24	11/26	Mechanism design and/or signaling theory Ch.22-24	Assignment 7 11/27
15	12/1	12/3	Evolutionary Game Theory (extra material)	
16	12/8	12/10	Review	