ECON 505: Introduction to Game Theory

University of Illinois at Urbana-Champaign
College of Liberal Arts & Sciences
Department of Economics

Professor Jorge Lemus

Fall 2023
108 David Kinley Hall
Monday and Wednesday: 2:00 PM - 3:20 PM

Communication:

Office: 213 David Kinley Hall
E-mail: jalemus@illinois.edu
Office Hours: By appointment.

Course Description:

Applications of game theory are ubiquitous in the real world. The following are just some examples of situations that can be analyzed using game theory: A firm bargaining with its workers; two firms competing in a market; a group of countries allocating resources for defense against a common enemy; candidates for political office deciding their proposed platforms; oil companies bidding on an offshore oil tract of uncertain value in a sealed-bid auction. In such situations, the actions taken by one agent have consequences for others. For this reason, agents must think strategically: What will my opponents do? How do their actions influence the choice of my own action? Game theory provides a framework to analyze such strategic interactions among economic agents. This course aims to introduce students to game-theoretic concepts and their practical applications across a variety of topics.

References:

The course is primarily based on the content presented during classes. Two good optional references are:

Game Theory: An Introduction. Steven Tadelis. Princeton University Press (2013)
Game Theory for Applied Economists. Robert Gibbons. Princeton University Press (1992)

Evaluations:

Game Theory requires a lot of practice. The course will cover a lot of material and many different concepts. Quizzes and Homework are a good way to learn these new concepts and to stay up-to-date with all the material.

(30%) Homework (5)
(20%) Quizzes (4)
(15%) Midterm Exam 1: 2:00-3:20 p.m., Monday, October 2.
(15%) Midterm Exam 2: 2:00-3:20 p.m., Monday, November 13.
(20%) Final Exam: To be announced.

Topics covered in the Course:

(1)   Introduction, Single Agent Decision Theory, Expected Utility.

(2)   Static Games of Complete Information

(3)   Dynamic Games of Complete Information

(4)   Static Games of Incomplete Information

(5)   Dynamic Games of Incomplete Information

Assessment Policies
Assignment Policy:
All assignments are to be turned in at the beginning of the class in which they are due. Late assignments receive no credit. The assignment portion of your grade will be the average of all your assignment scores.

Academic Integrity:
"The University has the responsibility for maintaining academic integrity so as to protect the quality of education and research on our campus and to protect those who depend upon our integrity.

Expectations of Students. It is the responsibility of each student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions. Students have been given notice of this Part by virtue of its publication. Regardless of whether a student has actually read this Part, a student is charged with knowledge of it. Ignorance is not a defense.

The student code, describing: Student Rights and Responsibilities, General Policies and Regulations, and Academic Policies and Regulations is here https://studentcode.illinois.edu/

Emergency Response Recommendations:
The university maintains guidelines for emergency responses. A list of recommendations when to evacuate and when to find shelter are available at: https://police.illinois.edu/em/planning/

Statement on Accommodations:
To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources Educational Services (DRES) as soon as possible. To contact **DRES** you may visit 1207 S. Oak Street, Champaign, call 333-4603 (V/TTY), or email a message to disability@uiuc.edu.