



Game Theory & Applications

ECO 6409

Instructor Info



Dr. Fatma B. Gunay



Office Hrs: M & Th 12:30pm - 1:30pm



MAT327



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Course Info



Jan 8 - February 23



Monday, Wednesday



11:45am - 1:40pm



STZ0101

TA Info



Qilin (Kaelyn) Zhang



Office Hrs: Monday 2pm - 3pm



office



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Overview

This course provides a detailed introduction to Game Theory and its applications. We will start with the basic concepts and insights of game-theoretic reasoning. The first 2 weeks of the course is devoted to the introduction of the standard ways of representing games and to the discussion of the meaning of a strategy in different types of games. Once we cover the basics of game theory, we will dive deep into the applications of game theory to different fields. Some of the applications we will analyze (as time permits) are the Cuban missile crisis, insurance provision, contract design, price discrimination, and competition in oligopolies.

Material

Required Texts

Avinash K. Dixit, Susan Skeath & David H. Reiley. *Games of Strategy*. 4th or 5th Edition. WWNorton.

Avinash K. Dixit & Barry J. Nalebuff *The Art of Strategy: A Game Theorist's Guide to Success in Business and Life*. WWNorton.

Any required journal articles will be provided on Canvas.

Lectures

ECP6409 Game Theory Applied to Business Decisions will be conducted in a face-to-face format and will take place in room HGS240. Additionally, recorded lectures from the previous academic year will be made available on YouTube. This dual approach aims to provide flexibility while ensuring access to course content. It is important to note that in-person attendance is mandatory and fundamental to the learning experience. Recorded lectures are supplementary and cannot substitute for the in-class interactions and discussions.

While in-person attendance is required for enriched engagement and interaction, we recognize that circumstances may arise requiring absences. In such cases, students with an excused absence will be granted access to course materials. It is the student's responsibility to communicate and justify the absence to the instructor prior to the absence occurrence.

Exam Policies

The course will include two in-class exams. These exams are scheduled for the following dates:

- January 30
- February 22

Each exam will encompass a range of assessment formats, including multiple-choice questions, short answer questions, and problems. It is important to note that the exams are not comprehensive; they will focus on the material covered since the previous exam.

To aid your preparation, a practice test will be provided before each exam. The practice test are designed to help you familiarize yourself with the assessment formats and types of questions that will be presented.

During the examinations, students are permitted to use a simple scientific calculator (graphing calculators are not allowed). Additionally, you are allowed a 1-sided, hand-written, 3x5 cheat sheet to assist you during the exam.

Make-up exams will only be granted under exceptional circumstances, with approval from the instructor *prior to the exam date*. Valid reasons for requesting a make-up

exam include substantiated academic conflicts, religious observances, or unforeseen emergencies. Such cases will be reviewed on an individual basis.

Exam papers will be graded within a week following the examination date. The results will be promptly announced on the Canvas, allowing you to receive timely feedback on your performance.

Your diligence and commitment to your studies are essential for success in this course. If you have any inquiries or require further clarifications regarding the assessment process, please do not hesitate to contact the instructor.

Grading Scheme

50%	Exams, 25% each
20%	Homework Assignments
15%	Quizzes
15%	Group Homework

Grades will follow the following scale. Curving is at the discretion of the professor.

Points	Grade
96 and above	A
93-95.99	A-
90-92.99	B+
82.5-89.99	B
80-82.49	B-
77.5-79.99	C+
72.50-77.49	C
70.00-72.49	D
0-69.99	E

Quizzes

Throughout the module, there will be weekly quizzes held either during the Tuesday or Thursday in-class sessions. These quizzes will exclusively cover the material discussed during the respective week's lectures. Attentive participation in lectures is sufficient to excel, as the quiz questions will directly reflect the lecture content. At the end of the semester, I am going to drop the lowest quiz grade among the 6 total quizzes administered. This accommodation provides a safety net in case of unforeseen challenges.

Your quizzes will be evaluated by our Teaching Assistant, Qilin, within one week of submission.

Assignments

There will be an homework assignment each week. I will post them on Wednesday evenings. They are due on Monday at 9am. Assignments will be posted on Canvas. Please follow the instructions on Canvas to submit your assignment. I will drop the lowest grade out the 6 assignments.

Group Homework

A group homework assignment is scheduled for submission on February 20th at 9:00 AM. You will have an estimated 10 day period to collaborate on this assignment. Prior to the release of the group homework questions, it is your responsibility to identify your group members. Each group can have 4 or 5 students. Should you require assistance in forming a group, please inform Qilini, so that appropriate arrangements can be made.

Accommodations for Students with Disabilities

If you have a disability and need accommodations please be sure to contact the Disability Resource Center right away so they can help you get the accommodations you require. If you will need to use any accommodations in this class, please talk with me early so you can have the best possible experience this semester. For more specific information visit <https://disability.ufl.edu>

Diversity and Inclusion

I would like to create a learning environment for my students that supports different perspectives, thoughts, experiences, and identities. To help me accomplish this, please let me know if you have a name / set of pronouns that differ from the official UF records. If you believe that your performance in the classroom is being affected by outside factors, do not hesitate to contact me in person, electronically or even anonymously.

Academic Integrity

The University of Florida maintains high standards for academic integrity in order to provide the students the best quality education. An online copy of the academic honor policy can be found at Student Honor Code. Students are expected to be familiar with the Code and to recognize that their work in the course is to be their own original work that truthfully represents the time and effort applied.

Maintaining the integrity of your academic work is of utmost importance in this course. It is imperative that you refrain from seeking external assistance, including the use of online tutoring websites. Please be aware that these platforms, which I will not name here, are known to collaborate with educational institutions by sharing user data.

I want to emphasize that you are expected to complete assignments and assessments independently, relying solely on your own understanding and efforts. If you encounter challenges or require clarification, I strongly encourage you to reach out to me for guidance. Upholding academic honesty not only reflects your commitment to your education but also contributes to a fair and equitable learning environment for all students.

I would like to remind you one more time that the Honor Pledge below applies to any course work you are assigned:

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

On all work submitted for credit by students at the university, the following pledge is either required or implied: On my honor, I have neither given nor received unauthorized aid in doing this assignment.

Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. Summaries of course evaluation results are available online.

Use of Course Materials

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Class Schedule

DATE	TOPICS	READINGS	ASSESSMENTS
Week 1 (1/8-1/14)	Introduction	Ch 1 (DN) Ch 1, 2 (DSR)	HW1, Quiz1
	Prisoners' Dilemma	Reading 1	
	Game Fundamentals	Worksheet 1	
Week 2 (1/15-1/21)	Sequential Move Games	Ch 2 (DN) Ch 3 (DSR)	HW2, Quiz2
		Reading 2	
		Worksheet 2	
Week 3 (1/22-1/28)	Simultaneous Move Games;	Ch 3,4 (DN)	HW3, Quiz3
	Dominant / Dominated Strategies	Ch 4 (DSR)	
	Nash Equilibrium	Worksheet 3	
1/29	EXAM I		
Week 4 (1/29-2/4)	Multiplicity of Equilibria	Ch 5,9 (DN)	HW4, Quiz4
	Coordination Games	Ch 7 (DSR)	
	Randomization and Mixed Strategies	Worksheet 4	
Week 5 (2/5-2/11)	Repeated Prisoners' Dilemma	Ch 10 (DSR)	HW5, Quiz5
	Reputation	Worksheet 5	
Week 6 (2/12-2/18)	Applications	Ch 6 (DN)	HW6, Quiz6
		Ch 7 (DN)	Group HW
		Reading 3	
		Worksheet 6	
Week 7 (2/19-2/23)	Review		
2/21	EXAM 2		