Game Theory and Application
ECO 4400
Spring 2016 Syllabus

Course Information

Class Meeting: T & Th 9:35 - 11:25am.
Classroom: MAT 103.
Instructor: Prof. Wenche Wang, MAT 337, wangwc121@ufl.edu.
Office Hours: M & W 3pm - 5pm or by appointment only.

Course Description

This course introduces some basic elements of Game Theory and discusses its economic applications. Game Theory is an analysis of situations in which the payoff from an individual's actions depend upon the actions of others. It attempts to provide a formal framework and solution concepts to understand such situations and to make better strategic decisions. Game Theory has been widely applied in fields such as economics, political sciences, biology, and computer science.

Game Theory is a branch of mathematics. Rather than focusing on mathematical proofs or programming, this course emphasizes on the conceptual analysis and economic applications. The math requirement is limited to basic calculus but more advanced mathematics techniques would help with understanding the game theory reasoning.

Prerequisites

ECO 2023 Principles in Microeconomics
Calculus I

Textbook

No textbook is required for this class. The following textbook is recommended if you would like to do further reading on the material.
Games, Strategies, and Decision Making, by Joseph Harrington, Worth Publishers. ISBN 1429239964.

Attendance Policy

Attendance is mandatory in this class. Absence from each class will result in a point off from your final grade. You must notify me at least a week in advance for excused absences, such as doctor's appointments and job interviews.

Classroom Policy

- Talking in class constitutes class disruption. You are welcome to raise questions regarding class materials but other discussion is not allowed.
- Please switch your cell phone to silent mode to avoid distracting the instructor and other students.

- You must have your laptop closed during class. This course is mathematically intensive and therefore it is inefficient to take notes with laptops.
- Students with disabilities who require room accommodations should contact me early in the semester to discuss individual needs.
- Please check your e-mail regularly for announcements.

Academic Honesty

Academic dishonesty (such as plagiarism and cheating on exams) will be referred to Student Conduct and Conflict Resolution and may result in a failing grade in the course. Further penalties can also be assessed by Student Conduct and Conflict Resolution.

Grading Policy and Scale

Your grade is determined by your performance in homework assignments, quizzes, exams, and class participation.
Homework
You will be given four problem sets. Discussion is encouraged and you can turn in answers in a group of no more than four students. Problem sets are collected at the beginning of the class period. No late submission is accepted.
Quiz
Five in-class quizzes will be given at the beginning of class. These quizzes test basic understanding of models and concepts covered in the previous lectures. There is no make-up quiz.
Exam
There will be two midterm exams and a final exam. The final exam is cumulative and will be on the last day of class. If for any reason you are not able to take the exam at the scheduled time, please notify me before exam time.
Participation
In-class participation is highly encouraged. Students who participate in class will receive extra credits of up 5 points towards their final grade.
Scale

Homework	20%
Quiz	20%
Midterm 1	20%
Midterm 2	20 %
Final	20%

90-100	A
87-90	B+
80-87	B
77-80	C+
70-77	C
67-70	D+
60-67	D
0-60	E

Calendar (tentative)

Dates	Topics	Assignment	Quiz
Jan 5	**No Class**		
Jan 7	Introduction & Math review I		
Jan 12	Expected utility, Strategic form games		
Jan 14	Dominant strategies		*Quiz 1*
Jan 19	Nash equilibrium		
Jan 21	N-Player game		
Jan 26	Mixed strategies		
Jan 28	Summary and Review of Strategic Form Games	*Homework 1*	*Quiz 2*
Feb 2	Extensive form game		
Feb 4	Backward induction, Subgame perfection		
Feb 9	Backward induction, Subgame perfection		
Feb 11	Summary and Review of Extensive Form Game	*Homework 2*	*Quiz 3*
Feb 16	Review		
Feb 18	**Midterm 1**		
Feb 23	Cournot Model		
Feb 25	Stackelberg Model		
Mar 2, Mar 4	**Spring Break**		
Mar 8	Bertrand Model		
Mar 10	Summary and Review of Oligopoly	*Homework 3*	*Quiz 4*
Mar 15	Math review II, Repeated games		
Mar 17	Repeated games	*Homework 4*	
Mar 22	Review		
Mar 24	**Midterm 2**		
Mar 29	Incomplete Information Games (Static Game)		
Mar 31	Incomplete Information Games (Dynamic Game)		
Apr 5	Signaling Games		
Apr 7	Summary and Review of Incomplete Information Games	*Homework 5*	*Quiz 5*
Apr 12	Other Topics		
Apr 14	Review		
Apr 19	**Final**		