

ECO 6409: Game Theory Applied

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Fall 2019
Course Time: M/W period 7-8
Course Location: HGS 340

Prerequisites: Principles in Microeconomics (ECO 2023 *or equivalent*) and Calculus I (MAC 2233 *or equivalent*)
[suggested only] Intermediate Microeconomics (ECO 3101 *or equivalent*), Game Theory & App (ECO4400 *or equivalent*)

Required Texts: “The Art of Strategy” by A. K. Dixit and B. J. Nalebuff

Optional Texts: “An Introduction to Game Theory” by Martin J. Osborne,
“Game Theory: an Introduction” by Steven Tadelis

COURSE DESCRIPTION

This course examines the main ideas and tools in the field of Game Theory and their applications to business strategy. It is divided into three main sections loosely following the three parts of the book: simultaneous and sequential non-cooperative games with perfect information, simultaneous and sequential non-cooperative games with imperfect information or uncertainty, specific applications (mechanism design, auctions, bargaining). The main goal of the course is for the student to understand the logic and the reasons behind the main topics explained in class and their applications to real life problems. For this reason, the focus of each lecture will be more on the understanding of each tool and idea and less on its mathematic description and discussion. However, this does not mean that mathematic applications will not be discussed in class or required to succeed in the tests.

COURSE REQUIREMENTS AND GRADING

1. Class presence and participation (20% of the final grade):

Attendance is highly correlated with better grades and thus strongly encouraged. You are required to be in class on time as a form of respect towards both the instructor and your classmates. I will take attendance at the start of each class but I will not use the Canvas system to automatically take off points for missed classes and late arrivals; at the end of the course I will weigh the number of absences and delays with participation in class to determine the contribution to the final grade. A chapter of the textbook will be assigned before each class and I will ask questions about its contents. While wrong answers will not negatively affect the participation grade, showing knowledge and understanding of the reading will improve the participation grade (i.e. it is important to show in class that the book is being read even if not everything is perfectly clear). Timely and appropriate justification are encouraged and appreciated. If you have missed a class, it is your responsibility to find out relevant information from other students – therefore make sure you have the contact details of at least one other student in the class. In order to show respect for classmates and the instructors and to improve the learning experience for everybody, the use of cell phones, email, texting etc. is not tolerated. You can use your electronic devices only to take notes even though I strongly encourage you to use pen and notepad since during most classes we will study and analyze graphs, diagrams, and tables.

2. Final Exam (50% of the final grade)

The final exam will cover all the topics presented in class and it will take place during the exam week in October. The exam will consist of a combination of short open answer questions, and mathematical and/or analytical exercises.

3. Group project (15% written report, 15% oral presentation for 30% of the final grade)

The group project will apply the tools studied in class to a fictional business. Each project consists of a written report, to be submitted in PDF format on the last day of class (October the 2nd), and a presentation to be delivered in class on the last day of classes (October the 2nd). The grade for the written report will be the same for every group member, while the grade for the presentation will be specific for each student. Additional instructions will be provided during class and on Canvas.

GRADING POLICY AND SCALE

- Grades are calculated as follows: Attendance (20%), Group Project: Written Report (15%), Group Project: Presentation (15%), Final Exam (50%).
- Make-up exams must be arranged before the exam date/time and will only be offered for UF-related conflicts and religious holidays.
- Unexcused absences from in-class exams results in a grade of 0.
- No Extensions No Substitute Work

91.00-100	A
89.00-90.99	A-
87.00-88.99	B+
78.00-86.99	B
76.00-77.99	B-
74.00-75.99	C+
61.00-73.99	C
59.00-60.99	C-
57.00-58.99	D+
51.00-56.99	D
50.00-50.99	D-
0-49.99	E

A grade of C- is not a qualifying grade for major, minor, Gen Ed, or College Basic distribution credit. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

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<http://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

UF POLICIES AND ASSISTANCE

Attendance:

Absences will be excused in accordance with UF policy. Acceptable excuses include illness, religious holidays, military obligation, & the 12-day rule. More info about attendance and make-up policies can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Academic Honesty:

The University places a high premium on academic honesty. Accordingly, severe penalties are imposed for plagiarism and other instances of deception or fraud. The university's policies regarding intellectual honesty are detailed in the Student Honor Code (see <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>).

Counseling:

If you are ever having general issues with your coursework in any course or trouble in your personal life, please seek help from myself or another faculty member. I also encourage you to utilize the FREE and ANONYMOUS services of the UF Counseling and Wellness Center (352-392-1575; <http://www.counseling.ufl.edu/cwc/>).

Disabilities:

Students with disabilities can request classroom accommodations. They should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) and then bring the provided accommodation letter to the instructor.

Online Course Evaluations:

Students' feedback on the quality of instruction is extremely useful to the instructor to improve the quality of the course, therefore I strongly encourage you to conduct the online evaluation at <https://evaluations.ufl.edu> . Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>.

CALENDAR

REQUIRED READING BEFORE CLASS:

(1) "The Art of Strategy" by A. K. Dixit and B. J.Nalebuff

<i>Lecture</i>	<i>Date</i>	<i>Topic</i>	<i>(1)</i>
1	Aug 19	Presentation of the Course and Syllabus	
2	Aug 21	Introduction to Game Theory	Ch. 1
	Aug 25	<u>Deadline for the choice of the Group</u>	
3	Aug 26	Sequential Games under certainty and their solution mechanism	Ch. 2
4	Aug 28	Simultaneous and Repeated Games under certainty	Ch. 3
5	Sep 4	Games under certainty with multiple equilibria	Ch. 4
6	Sep 9	Simultaneous Games: Knowledge and Mixed Strategies	Ch. 5
7	Sep 11	Sequential Games: strategic moves	Ch. 6 & 7
8	Sep 16	Games under uncertainty: Introduction	Ch. 8
9	Sep 18	Games under uncertainty: Screening and Signaling	Ch. 8
10	Sep 23	Mechanism Design	Ch. 13
11	Sep 25	Bargaining	Ch. 11

12	Sep 30	Auctions, Bidding, and Contests	Ch. 10
13	Oct 2	Deadline for Group Projects and Review Before the Exam	
Final Exam			
