0ECO 6409 (011H) **J. Hamilton**
Game Theory Applied To Business Decisions **Spring 2020**

Game Theory Applied To Business Decisions

Class: Tuesdays and Thursdays, 7th and 8th periods, HGS 340
Office Hours: Wednesdays 1:30 pm – 3:00 pm. For other times, please make an appointment.
Office: MAT 328
Phone: 392-2999
Email: hamilton@ufl.edu

Prerequisites: ECP 5702 Managerial Economics
(If you have not taken this course or a close equivalent, please discuss this with me no later than immediately after the first meeting.)

Mathematics Needed: This class will employ basic differential calculus (maximization with respect to several variables) and some basic probability in lectures, problem sets, and exams. Problem sets and exams will not require proofs. Game theory does require using logic to develop many arguments, so be prepared to think rigorously.

Requirements:
1) *Midterm Exam* (25% of final grade)

2) *Class participation* (15% of final grade)
At times, we will discuss readings in class. I expect all students to have read that material in advance and to be prepared to discuss it.

Attendance at all class sessions is expected. Please inform me in advance if you will miss class for interviews or similar professional obligations. Please inform me if you miss class due to illness. Anyone who misses more than one class will be required to do a brief written assignment on the material missed. This grade is based not simply on attendance, but on the quality of your participation in the case discussions.

3) *Final Exam* (60% of final grade)
Tuesday, February 25, 7-8th periods
(If you have a conflict, let me know soon to schedule another time.)
This will consist of problems and short essays.

To facilitate student discussion, I will designate some classes as NO LAPTOP days. Failure to comply may affect your class participation grade. Every day is a NO CELL PHONE day!!

Text: Harrington, *Games, Strategies, and Decision Making, 2nd edition*, Worth Publishers, 2015
(all chapter assignments on syllabus refer to this text)

Additional Readings (to be posted on Canvas)
To Be Announced in Class and in Emails

Syllabus
(subject to change)

Jan 7 Introduction
What is Game Theory?
How Can We Use It in Business Decisions?
How Do We Address and Model Strategic Decisions in Game Theory?
Chapter 1 and 2

Jan 9 What Not to Do (and More)
Nash Equilibrium in Strategic Form Games
Chapter 3

Jan 14 Nash Equilibrium in Strategic Form Games (continued)
Chapter 4 and 5

Jan 16 Nash Equilibria in Extensive Form Games
Backward Induction and Subgame Perfection with Perfect Information
Chapter 8 and 9

Jan 21 Mixed Strategies
Chapter 7

Jan 23 Games with Continuous Strategy Sets
Bertrand and Cournot Oligopoly Models
Chapter 6

Jan 28 Multistage Games
Location Models
TBA

Jan 30 Midterm (I will announce topics to appear on the exam at the beginning of class on January 28.)

Feb 4-6 Sequential Games with Imperfect Information
Private Information
Signaling Games
Chapters 10 and 11

Feb11 Applications 1
Strategic Moves
TBA

Feb 13 Applications 2
Contract Design: Incentives and Tournaments
TBA

Feb 18 Repeated Games
Chapters 13 and 14

Feb 20 Review for Exam

Feb 25 Final Exam 7-8th periods

Enrollment in this course constitutes acknowledgement of the following:

1) I understand that the University of Florida expects its students to be honest in all of their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action, up to and including expulsion from the University.

2) I will adhere to University copyright policies as found at https://it.ufl.edu/policies/intellectual-property/copyright/ .

3) Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.