Spring 2008

MGT 307

Game Theory and Decision-Making **Professor Jay Prag**

Decision-making is literally an art and a science. The formal, analytical tools (from economics and mathematics) that largely fall under the heading of game theory allow us to understand the rational approach to decisions that have discrete choices and clear paths. Strategy, brinksmanship, coercion and cooperation are some of the ways of describing the human elements of decision-making. Combining these human elements with traditional game theory gives up a set of tools, approaches, and perspectives on decision-making that can handle most of the decisions that business people encounter in the real world.

This class will combine many real-world examples of game theory and strategic decision-making with in-class, participatory renditions of games, decisions and interpersonal strategies (bluffing, coercion, limited information, etc.) It will not teach students how to win at poker or how survive the next Cuban Missile Crisis but it will discuss the strategies and practical realities (information sets, loss functions, credible commitments, etc.) of those games and what approaches and tools work under various circumstances.

The text for this class will be Thinking Strategically by Dixit and Nalebuff. For those of you who are used to my 'strategy' for (not) using textbooks in Corporate Finance, I will be following this one fairly closely so the readings are strongly recommended. Readings are listed on the back.

Grades:

There will be homework assignments every other week and a final exam. Your grade will be determined as follows:

Homework 30%
Final 70%

Office Hours and Contact Info:

My office is Burkle 218, my office phone number is (909) 607-2576 and the fax number is (909) 621-8543. My e-mail address is jay.prag@cgu.edu . My office hours will be a half hour before each class and after class as needed. I am also available by appointment.

The outline for the class is as follows: Chapters

Topic 1:	Introduction; Decision-making and its parameters. What is a game? The information set.	Intro, 1
Topic 2:	Game Theory; Simultaneous vs. sequential moves; Pure strategies vs. mixed strategies	2, 3, 7
Topic 3:	Uncertainty and information limitations; Threats, promises and commitments	5, 6
Topic 4:	Repeated games and evolutionary games	4
Topic 5:	Collective-action games, Voting; Bidding and auctions	9, 10
Topic 6:	Brinksmanship; Bargaining; Incentives	8, 11, 12

We will attempt to cover a topic each week but I have purposely not assigned anything to Week 7 so that we can be sure to cover all of the material.