



VANDERBILT

Owen Graduate School of Management

Spring 2011, Mod III

Game Theory & Business Strategy MGT 425

INSTRUCTOR INFORMATION

Professor: Mike Shor
Office: Management Hall 352
Phone: 343-4334
E-mail: mike.shor@owen.vanderbilt.edu

COURSE WEB SITE

<http://www2.owen.vanderbilt.edu/mike.shor/courses/game-theory/>

COURSE DESCRIPTION

People rarely make decisions in a vacuum. The right choice for us may depend upon the choices made by others. In turn, the profits and happiness of these other individuals depends on the actions that we will take. Game theory offers a systematic way of analyzing strategic decision-making in interactive situations. This course develops a conceptual framework for understanding business strategy.

As it is a course in “theory,” we take an analytical and often quantitative approach. We will use equilibrium analysis to study topics including the use of credible threats and promises, strategic use of information through signaling and screening, negotiation and bargaining, and bidding in and designing auctions.

Game theory is the *science* of strategic interaction. The ultimate goal of this course is to enhance the student's ability to *think strategically* in complex, interactive situations. The examples presented in class are intended to isolate and illuminate (often in the simplest framework possible) particular aspects of strategic interaction that arise in real situations. For a broader understanding, it is necessary for the student to realize the similarities between these simple games and many situations both in business and in life.

Students will participate in games against other classmates online prior to most lectures. Both fun and simple, the games illustrate general principles of behavior. Often, course readings will demonstrate the application of game theoretic principles to sports, movies, popular culture, nature, etc. While perhaps serving as a nice break from the theory, these applications have a broader goal: since many game theoretic concepts appear counterintuitive at first, having a toolbox of simple analogies and explanations will empower you to convince others of your decisions. After all, you never truly understand the material until you are able to communicate it to others.

READINGS

Readings are available online on the course web site. These range from the whimsical to the serious. These readings may allow you to look more deeply at the material or may present concepts that will not be covered in class directly. **All readings are required.** At least one final exam question will be based directly on these readings.

Further, an *optional* text is:

Games of Strategy. Avinash Dixit and Susan Skeath. New York: WW Norton.

We will not be referencing this text, but it may be valuable for reviewing course concepts. There are three editions available, and any will work for review. The syllabus references chapters in the first two editions, copies of which are available at the library on reserve.

GRADING

Your grade will depend on four case assignments, class participation, participation in experimental games, and a final exam.

- Group Case Write Ups 15% each
- Class Participation 15%

You should be prepared for class and expect to be called upon without notice to discuss readings, solve a problem, or contribute to class discussion. Occasionally, a student may be swamped with work and unprepared for a class meeting or simply not wish to be called on. This is understandable. If you do not wish to be called on, simply do not use your name tent. Otherwise, *name tents should be brought to and used in every class.*

- Final Exam 25%

Most of the exam will be a straightforward review of the material, closely paralleling in class problems and sample problems provided on the web site. A few questions unlike those you have seen in the examples may test your critical understanding of the material.

- Participation in Experimental Games 0 to -10%

You will be required to participate in experimental games each week. The games are not graded but participation is required and failure to participate reduces one's grade.

EXPERIMENTAL GAMES

Students will find a link to online games each week from the course web site. Participation in these games is mandatory, though performance in the games does not impact the grade. Games will generally become available Thursday evening and must be played by 6:00 PM on Sunday (a different due date applies for the very first and last games). No studying or preparation is necessary prior to participating. Games generally will not require more than ten or fifteen minutes to complete.

CASE WRITE-UPS

FORMAT: You have been promoted to the position of chief strategist in your corporation. Others in your company rely on you for fast, comprehensive analysis. These assignments will ask you to analyze a specific situation within a corporation and provide advice.

DELIVERABLE: These memos will sometimes require analysis of data and decisions about the modeling approach you wish to take. Write a short, concise memo. Memos must be under 750 words, not including exhibits. You should briefly describe your methodology and specifically address the questions asked. While supporting tables and figures are encouraged, the “upshot” should be in the body of the memo.

Assignments must be submitted **prior to the start of the class** in which they are due.

Late assignments may not be accepted.

GROUP FORMATION: Groups must consist of either four or five students. Groups are self-selected. However, students are *strongly cautioned* to form groups carefully, ensuring that the members complement each other in analytical, writing, and mathematical skills. Note below that the grading policy places heavy emphasis on good writing and strong analysis.

Students should notify me of their group members as groups are formed but no later than the date in the calendar below. It is suggested that students form groups with classmates in the same section. Groups across sections are allowed; however, as due dates vary by section, the *earliest* due date for any group members applies to the entire group.

HONOR CODE

Students are bound by the Honor Code for all work completed in this course. Academic dishonesty will not be tolerated in any form. The following specific guidelines relate to this class:

CASE ASSIGNMENTS must consist of the work of the group, the *whole* group, and nothing but the group. By placing one’s name on a group assignment, a group member signifies that he or she and other named group members all contributed in substantial part to the assignment. Plagiarism includes any use of previous years’ materials, and is prohibited. There may be no discussion of the case with students in other course sections (except for group members) until the case is covered in all sections.

EXPERIMENTAL GAMES: The value of the experimental games is diminished with prior knowledge of the game. Therefore, it is a breach of the Honor Code to discuss the content of an experimental game with another student in the course who has not yet participated, or to gain information about an experimental game in which one has not yet participated.

Students may not use any prior course material and may not share course materials with future students without my prior permission. Further, the standard cautions about properly attributing cited or paraphrased material and not giving or receiving assistance on the final exam apply.

Ambiguity in the honor policies is not an excuse for a violation. If you have any questions about how the Honor Code applies to specific scenarios, please discuss them with me.