

INSTRUCTOR INFORMATION

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Hours: Tue 2:00-3:00 & by appointment

COURSE WEB SITE

<http://www.mikeshor.com/courses/gametheory/>

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 these environments and introduces analytical tools for solving games.

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, 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 simple examples presented in class are intended to isolate and illuminate aspects of strategic interaction that arise in real situations. For a broader understanding, it is necessary for the student to recognize the similarities between these simple games and real situations.

Students will participate in games against classmates most weeks. Both fun and simple, the games illustrate general principles of behavior. Required course readings will sometimes delve further into the theory. Often, these readings will demonstrate the application of game theoretic principles not only to economics, but also to sports, movies, popular culture, nature, etc.

GRADING

- Midterm Exam 20%
- Final Exam 35%

Most of the exam questions will be a straightforward review of the material, closely paralleling in-class problems, sample problems provided on the web site, and quizzes. A few questions unlike those you have seen in the examples may test your critical understanding of the material. The final exam is cumulative. No make-up or early exams will be given except with written permission from the Office of Student Services & Advocacy.

- Class Participation 10%

You should be prepared for class and expect to be called upon without notice to contribute to class discussion, particularly about your decisions in online games. 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 occasionally do not wish to be called on, simply let me know before class. Please avoid the use of computers/phones for non-class related activities.

- Participation in Games 10%

You will be required to participate in online games each week. Performance in the games is not graded, but participation is required and failure to participate reduces one's grade.

- Quizzes & Assignments 25%

There will be six quizzes, but only the best five will count. Additionally, the student may do additional assignments that can replace a lower-scoring or missed quiz. These assignments will ask you to analyze a specific situation that requires game-theoretical analysis and offer advice about the best course of action. Write a short, concise response of under 750 words, not including figures or equations. These assignments are substantially more labor-intensive than studying for the quiz. Assignments may be turned in any time up to the last day of class.

- Extra Credit up to 5%

Game theory is everywhere! If you find a newspaper article, movie, novel, song, etc., with a game-theoretic theme, email it to me. These are worth about 2-5 points each, for a maximum of 100 points (100 points=5% added to your course average). Information on extra credit is posted on the course web site.

READINGS

Readings are available online on the course web site. Ranging from the whimsical to the serious, readings allow you to examine the material more deeply or readings may cover important concepts not covered in class directly. **All readings are required.** Quiz and exam questions may 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 four editions available, and any will work.

ONLINE GAMES

Students will find a link to online games each week on the course web site. Participation in these games is mandatory, but 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 Monday. No make-ups for missed or late games are possible. Additionally, there may be a game due mid-week the first and last week of class. No studying or preparation is necessary prior to participating. Games generally will not require more than ten to fifteen minutes to complete.

ACADEMIC INTEGRITY

Academic misconduct will not be tolerated in any form. Any violation of the academic integrity policy will result in failure of the course and will likely be referred to the Academic Misconduct Hearing Board for further sanctions. The following specific guidelines relate to this class:

EXAMS & QUIZZES are closed-book, closed-note, individual efforts.

ASSIGNMENTS must be done individually, without consultation with others. Both assignments and extra-credit write-ups must be original work, and any outside sources used must be properly cited and documented. Plagiarism includes any use of previous years' materials, and is prohibited.

ONLINE GAMES: The educational value of the online games is diminished with prior knowledge of the game. Therefore, it is a breach of academic integrity to discuss the content of an experimental game with another student in the course who has not yet participated or to gain information in any manner about an experimental game in which one has not yet participated.

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

Course Calendar (tentative)

Wk	Date	Day	Topic (tentative)	Exams
1	Aug 30 Sep 1	T R	1. Introduction	
2	Sep 6 Sep 8	T R	2. Simultaneous games	
3	Sep 13 Sep 15	T R	2. Simultaneous games 3. Sequential games	Quiz 1
4	Sep 20 Sep 22	T R	3. Sequential games	Quiz 2
5	Sep 27 Sep 29	T R	4. Mixed strategies	
6	Oct 4 Oct 6	T R	No Class 4. Mixed strategies	Quiz 3
7	Oct 11 Oct 13	T R	5. Repeated games	
8	Oct 18 Oct 20	T R	Review	Midterm Exam
9	Oct 25 Oct 27	T R	6. Strategic moves	
10	Nov 1 Nov 3	T R	7. Information	Quiz 4
11	Nov 8 Nov 10	T R	7. Information	Quiz 5
12	Nov 15 Nov 17	T R	8. Auctions No Class	
	Nov 22-24		Thanksgiving Recess	
13	Nov 29 Dec 1	T R	8. Auctions	Quiz 6
14	Dec 6 Dec 8	T R	8. Auctions Review	
	TBA			Final Exam

Online game due dates are posted on the course web site.