Econ 644: Game Theory - Spring 2013
Tuesdays, 1/29 - 5/07, 6:00pm - 8:45pm
Saturday, 2/9/13, 10:45am - 1:30pm

Instructor
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Problem sets, announcements, and lecture notes will be posted on the website. Once announcements are posted, I will consider students to be aware of them. For this reason, I urge students to frequently visit the course website.

Required Text
The required textbook for this course is Robert Gibbons, Game Theory for Applied Economists, Princeton University Press, 1992. This is available in paperback. I placed an order with the JHU bookstore, or you can procure a copy through any alternative bookseller, such as, Amazon: http://www.amazon.com/Theory-Applied-Economists-Robert-Gibbons/dp/0691003955 or Barnes and Noble: http://search.barnesandnoble.com/Game-Theory-for-Applied-Economists/Robert-Gibbons/e/9780691003955
Additional references are posted below.

Course Description
Most real-world decisions are not made in isolation, but involve interaction with others. This course studies the competitive and cooperative behavior that results when several parties with conflicting interests must work together. We will learn how to use game theory to formally study situations of potential conflict: situations where the eventual outcome depends not just on your decision and chance, but the actions of others as well. Applications are drawn from economics, business, and political science. Typically there will be no clear-cut "answers" to these problems (unlike most single-person decisions). Our analysis can only suggest what issues are important and provide guidelines for appropriate behavior in certain situations. (Peter Cramton, University of Maryland)

Prerequisites
Microeconomic Theory and Policy (440.601) is required of all students. I will use calculus freely during the semester. Based on my experience, some students may find this course difficult because of its quantitative nature.

Grading
Your grade will be determined as a weighted average of problem sets and exams with the following weights:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Problem Sets</td>
<td>20%</td>
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<tr>
<td>Midterm Exam</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>50%</td>
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Letter grades will be determined according to a standard scale (A: 90% and above, B: 80 to 90, C: 70 to 80, D: 60 to 70, F: below 60). There is NO extra credit.

Problem Sets: There will be six graded problem sets. Due dates will be posted on the website. The problem set portion of your grade will be based on your five highest scores. You will **not** receive credit for a problem set that you hand in late. The problem sets are fairly involved so I encourage you to start them early! They tend not to be something you can complete the night before they are due. I encourage you to work with your classmates on these assignments, but all students must hand in their own assignment.

Exams: There will be two exams held approximately half way through the course and on the last day. Students with learning disabilities who require special exam procedures should get in touch with me as soon as possible. Students are required to take both examinations. A make-up examination will be an exception and will be granted **only** to those students with a valid university excuse. Exam dates, times, and locations will be posted on the course website.

The university’s policy on grading requires me to use the grading system I announce at the beginning of the semester in all cases. I cannot make any exceptions to that rule. Be sure to review the problem sets and old examinations posted on the website as soon as possible to determine if this course is right for you.

**Tentative Course Outline**

1. The Theory of Rational Choice
2. Nash Equilibrium Theory
3. Nash Equilibrium Illustrations
4. Mixed Strategies
5. Extensive Form Games with Perfect Information (Theory)
6. Extensive Form Games with Perfect Information (Illustrations)
7. Extensive Form Games with Perfect Information (Extensions)
8. Bayesian Games
9. Extensive Form Games with Imperfect Information
10. Repeated Games
11. Bargaining

**Additional References**

These are other references that you may wish to consult, but are **NOT** required for the course.


