Econ 109: Game Theory
Spring 2009

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Office Hours: T 13:30-15:30 in Econ Annex 103
Class: TTh 8:00-9:20 in Solis Hall 104

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Discussions: Th 7-7:50pm and 8-8:50pm
in HSS 1330

This course offers an analytical framework to help us understand the phenomena we observe when decision-makers interact. The course explores decision-making in strategic situations, in which each agent's behavior affects the well-being of other agents. Game theory is a bag of technical tools for rigorously analyzing decision-making in such situations. Almost every type of interaction between living things is strategic. As social scientists, we focus on human interaction, and we shall assume that people behave in a rational, deliberate manner. In addition to developing basic theoretical tools, we will consider applications from a variety of areas, including economics, political science, and law.

Prerequisites: Econ 100B or 170B.

Examinations: There will be one midterm examination and a final examination. The midterm is scheduled for Tuesday, May 5th, and will be held in class. The final will be cumulative and will take place on Thursday, June 11, 8-11am.

Problem Sets: Weekly problem sets will be assigned. The best practice for the exams is to struggle with the problems yourself first.

Grades: Final (45%); midterm (35%); problem set completion, quizzes, and class participation (20%).

Required Textbook:
Watson, J., Strategy: An Introduction to Game Theory, W.W. Norton, 2nd Ed. (JW)

Other recommended books: Dixit, A. and S. Skeath, Games of Strategy, Norton 2003, 2nd. Ed.

Class Website: Materials will be posted on the WebCT page for Economics 109. Instructions for accessing WebCT are at http://webct.ucsd.edu. Students should check regularly for announcements.

Regrading: Students have one week from the day in which the examinations are returned to report errors in grading and/or to request that problems be re-graded. If a student submits his/her exam for re-grading, then the students entire exam will be re-graded by the professor (with no guarantee of a higher total score).

Academic Integrity: A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgment of the work and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned. To review UCSD policy see: `http://academicintegrity.ucsd.edu`

(Preliminary) Class Schedule

I. Representing Games
Tu 3/31   Introduction. Extensive Form. JW 1, 2.
Th 4/2   Strategy definitions and normal form representation. JW 3.
Tu 4/7   Beliefs and mixed strategies. JW 4, 5.

II. Analysis of Static Settings
Th 4/9   Dominance and best response. JW 6.
Tu 4/14   Rationalizability and iterated dominance. JW 7.
Th 4/16   Applications. JW 8.
Tu 4/21   Nash Equilibrium (NE). JW 9.
Th 4/23   NE applications: oligopoly models, tragedy of the commons. JW 10.
Tu 4/28   Mixed Strategy NE. JW 11.

III. Analysis of Dynamic Settings
Th 4/30   Extensive form, sequential rationality and backward induction. JW 14, 15.
Tu 5/5   MIDTERM
Th 5/7   Subgame Perfection. JW 15.
Tu 5/12   Applications. JW 16, 17.
Th 5/14   Ultimatum bargaining and other applications. JW 19 (20).
Tu 5/19   Other applications. JW 21.
Th 5/21   Repeated games. JW 22.
Tu 5/26   More on repeated games. JW 23.

IV. Information
Th 5/28   Incomplete information. JW 24.
Tu 6/2   Bayesian NE and application. JW 26, 27.
Th 6/4   Perfect-Bayesian Equilibrium. JW 28, 29.