

# COURSE ANNOUNCEMENT

## GAME THEORY

### MATH 486/686

Spring Semester 2007  
MW 2:30-3:45 PM  
AB 213

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Game theory is the mathematical modelling and analysis of conflict situations involving two or more players. It is mostly used in the social sciences of economics (e.g., analyzing the competition among firms in a market) and political science (e.g. modeling the arms race, or measuring the relative power of political parties within a legislature), but has other applications as well.

In this course we provide a mathematical introduction to game theory. No prior knowledge of the subject will be assumed. TOPICS COVERED: Extensive and strategic form games; Nash equilibrium; repeated games; matrix and bimatrix games; minimax theorem; TU/NTU solution; marriage, college admission, and houseswapping games; core; Shapley value; power indices; NTU games.

**Text:** Shapley, L. (1994) *Lecture Notes*, UCLA. Available in the bookstore.

**Prerequisites:** Linear Algebra (Math 330), or consent of instructor. Background in linear programming would be helpful but is not required.

Coming Fall 2007:            MATH 485/685 Combinatorics and Graph Theory  
   MATH 780 Topics in Cooperative Game Theory