Econ 471b. Topics in Cooperative Game Theory

**Day / time:** F 9:25 - 11:15 am  
**Course Type:** Undergraduate  
**Course term:** Spring  
**Instructor(s):** Pradeep Dubey

Permission of Instructor Required

The course will explore various topics in Cooperative Game Theory with applications to fair division, cost allocation and matching. Topics include: one-sided matching (e.g., the market for kidney exchange), and two-sided matching (e.g., the National Resident Intern Matching Program), with emphasis on incentive compatibility of the underlying mechanisms; core and Shapley value of side-payment games (special focus on market games, cost allocation, and measuring power in voting systems); convex games and the centrality of the Shapley value in the core (canonical example being games on networks); the convergence of core and value to competitive equilibria in large markets. It will also cover the extension of core and value to games without side-payments, starting with the Nash Bargaining solution with fixed, and variable, threats; and time permitting, the convergence phenomenon in perfectly competitive markets.

There is no text book. Lecture notes will be posted and articles handed out. There will be homework approximately every 2 weeks. Each student will be required to give one lecture of about an hour on a topic (from the above list) assigned by — and discussed with — the professor; and to write it up by way of lecture notes.

*Prerequisite:* Intermediate Microeconomics

**Undergrad Course Category:** Microtheory

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