

Matching Markets: Theory and Practice
Instructor: Tayfun Sönmez

COURSE DESCRIPTION

The mini-course will provide an overview of some recent research and policy work on matching markets. The focus of the course is the evolution of the literature both from a theoretical and also practical perspective. Topics include two-sided matching, house allocation, school choice, kidney exchange, matching with contracts, and cadet branching.

SCHEDULE

1. Lecture 1: House Allocation & Housing Markets

- (a) Sönmez and Ünver (2011), “Matching, Allocation, and Exchange of Discrete Resources”, J. Benhabib, A. Bisin, and M. Jackson (eds.) *Handbook of Social Economics*, Elsevier, 2011, Chapter 2 (**background reading**).
- (b) Shapley and Scarf (1974), “On cores and indivisibility,” *Journal of Mathematical Economics* 1, 23-28.
- (c) Roth and Postlewaite (1977), “Weak versus strong domination in a market with indivisible goods,” *Journal of Mathematical Economics* 4, 131-137.
- (d) Hylland and Zeckhauser (1977) “The efficient allocation of individuals to positions.” *Journal of Political Economy* 87, 293-314.
- (e) Roth (1982), “Incentive compatibility in a market with indivisible goods,” *Economics Letters* 9, 127-132.
- (f) Abdulkadiroğlu and Sönmez (1998), “Random serial dictatorship and the core from random endowments in house allocation problems,” *Econometrica* 66, 689-701.
- (g) Abdulkadiroğlu and Sönmez (1999), “House allocation with existing tenants,” *Journal of Economic Theory* 88, 233-260.

- (h) Sönmez and Ünver (2005) “House Allocation with Existing Tenants: An Equivalence,” *Games and Economic Behavior* 52, 153-185.

2. Lecture 2: Kidney Exchange

- (a) Sönmez and Ünver (2011), “Matching, Allocation, and Exchange of Discrete Resources”, J. Benhabib, A. Bisin, and M. Jackson (eds.) *Handbook of Social Economics*, Elsevier, 2011, Chapter 3, (**background reading**.)
- (b) Roth, Sönmez and Ünver (2004), “Kidney Exchange,” *Quarterly Journal of Economics* 119, 457-488.
- (c) Roth, Sönmez and Ünver (2005), “Pairwise Kidney Exchange,” *Journal of Economic Theory*, 125, 151-188.
- (d) Roth, Sönmez and Ünver (2007), “Efficient Kidney Exchange: Coincidence of Wants in Markets with Compatibility-Based Preferences,” *American Economic Review*, 97-3: 828-851.
- (e) Ünver (2010), “Dynamic Kidney Exchange,” *Review of Economic Studies*, 77 (1): 372-414.
- (f) Sönmez and Ünver (2011), “Altruistically Unbalanced Kidney Exchange,” Boston College working paper.

3. Lecture 3: School Matching

- (a) *Two-Sided Matching: A Study in Game-Theoretic Modeling and Analysis*, by A.E. Roth and M.A.O. Sotomayor, Cambridge University Press, 1990, Chapters 2, 3 and 5, (**background reading**.)
- (b) Sönmez and Ünver (2011), “Matching, Allocation, and Exchange of Discrete Resources”, J. Benhabib, A. Bisin, and M. Jackson (eds.) *Handbook of Social Economics*, Elsevier, 2011, Chapter 4, (**background reading**.)
- (c) Gale and Shapley (1962), “College Admissions and the Stability of Marriage,” *American Mathematical Monthly*, 69, 915.
- (d) Balinski and Sönmez (1999), “A Tale of Two Mechanisms: Student Placement,” *Journal of Economic Theory* 84, 73-94.

- (e) Abdulkadiroğlu and Sönmez (2003), School choice: A mechanism design approach, *American Economic Review* 93, 729-747.
- (f) Ergin and Sönmez (2006), “Games of School Choice under the Boston Mechanism,” *Journal of Public Economics*, 90, 215-237.
- (g) Pathak and Sönmez (2008), “Leveling the Playing Field: Sincere and Strategic Players in the Boston Mechanism” *American Economic Review*, 98(4), 1636-52.
- (h) Kesten (2010), “School Choice with Consent,” *Quarterly Journal of Economics*, 125(3), 1297-1348.
- (i) Pathak and Sönmez (2011), “School Admissions Reform in Chicago and England: Comparing Mechanisms by their Vulnerability to Manipulation,” *American Economic Review*, forthcoming.

4. Lecture 4: Cadet-Branch Matching

- (a) Kelso and Crawford (1982) “Job Matching, Coalition Formation, and Gross Substitutes”, *Econometrica*, 50, 1483-1504, (**background reading**.)
- (b) Hatfield and Milgrom (2005), “Auctions, Matching and the Law of Aggregate Demand,” *American Economic Review*, 95, 913-935, (**background reading**.)
- (c) Hatfield and Kojima (2010), “Substitutes and Stability for Matching with Contracts,” *Journal of Economic Theory*, 145, 1704-1723.
- (d) Echenique (2011), “Contracts vs. Salaries in Matching,” *American Economic Review*, 102 (1), 594-601.
- (e) Sönmez and Switzer (2011), “Matching with (Branch-of-Choice) Contracts at United States Military Academy,” Boston College working paper.
- (f) Sönmez (2011), “Bidding for Priorities: Improving ROTC Branching Mechanism,” Boston College working paper.