

Market Design Course Outline

Instructor: Diana MacDonald

Textbooks:

- “Market Design: Auctions and Matching” by Guillaume Haeringer
- “Two-Sided Matching: A Study in Game-Theoretic Modeling and Analysis” by Alvin E. Roth and Marilda A. Oliveira Sotomayor
- “Auction Theory” by Vijay Krishna

Part I: One-to-One Matching Markets

- Marriage Market
- Stability and Strategy-proof
- Deferred Acceptance Algorithm

Part II: Many-to-One Matching Markets

- Medical Match: National Residency Matching Program
- School Choice: Boston and New York School Match
- Stability, Efficiency, and Strategy-proof
- Deferred Acceptance Algorithm

Part III: Assignment Problems

- Stability, Efficiency, and Strategy-proof
- Serial Dictator and Top Trading Cycles
- Kidney Exchange: Trades vs. Waiting List

Part IV: Auctions

- Ascending/Descending Auctions
- Second-Price Auction
- First-Price Auction
- Revenue Equivalence