
Columbia Business School

B8260: Designing Markets: The Economics of Matching, Auctions, and Platforms Course Syllabus Spring 2021

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Office Hours: TBD

NB: Specific topics subject to change

Overview:

The modern marketplace, from dating markets bringing people together to e-commerce platforms bringing buyers and sellers together, is increasingly “designed” – that is, governed by rules and practices that are chosen by firms and policymakers, rather than those that emerge organically. Moreover, designed markets are being created where none existed before, in order to improve outcomes – examples include the allocation of donations to food banks, advertising and spectrum auctions, the school and the medical match, much of the gig economy, online auctions, and online dating. This class uses the tools of economics, from game theory to behavioral economics, to help understand how these decisions affect the growth and success of designed marketplaces.

Evaluation and Grading:

Students will be evaluated for their contributions to the course on two dimensions. The first will be a participation score, which will make up 30% of the grade. This will be comprised of a combination of attendance and contributions to the in-class discussion. Another 20% of the grade will be come from pre-class online quizzes. The remaining 50% of the grade will be attributed to the group projects, including initial proposals, participation in voting, peer evaluations, and judge evaluations.

Group Projects:

This will proceed in two steps. First, each student will generate a one-page pitch for a proposal concept. Proposals will be graded. An additional payoff for writing a good proposal is that if it is selected for the second, group stage, the author of the original proposal is guaranteed the opportunity to work on it. Proposals will be selected largely on the basis of student votes, and partially on professor preference. Students whose proposals are not selected will be allocated by

Gale-Shapely deferred acceptance to teams for the group project. The teams will develop the proposals into a 20-slide deck and a shorter ten minute “pitch,” with questions from the audience. There will be an additional 10 days following the pitch day to respond to concerns and edit a final, graded submission.

Materials:

The only required “textbook,” which we will rely on for a nontechnical introduction to subjects, Al Roth’s *Who Gets What and Why*. The course will also rely on academic papers and case studies.

Plan:

NB: In the event of that the class is scheduled for a three-hour time slot, each class will cover two blocks.

Block 1: Introduction to Market Design

- Feeding America (Case Study “Feeding America” A)
- Review of second-price auctions

Block 2: Markets as information aggregation

- Feeding America continued (Case Study “Feeding America” B)
- Internal Prediction markets

Block 3: Market Unraveling

- eBay, sniping, and auction design
- Judicial clerks, medical residents, and coordinated markets

Block 4: Reputation Systems

- Review of adverse selection
- How and when do reputation systems work?

Block 5: Communication and Collusion?

- Incomplete information and bargaining breakdown

Block 6: Designing Online Markets

- Guest speaker

Block 7: Designing the Gig Economy

- Guest speaker

Block 8: School Choice

- Deferred acceptance and market design with mistakes

Block 9: Auctions: Selling Spectrum and Advertising

- VCG and GSP
- The Winner's Curse
- Combinatoric auctions

Block 10: Dating Apps

- Guest Speaker
- Case Study "Updating Dating"

Block 11: Group Project Pitch Day

- Guest Critic (TBD)

Block 12: Capstone

- Case Study "Halliday's Oasis" Capstone
- Course Evaluation