

Game Theory with Applications to Finance and Marketing, II

Course Syllabus, Spring 2022

Class meet at Management Building 1, Room 203, 6:30-9:20pm, Thursday

We shall be going virtual!

Lectures will be uploaded to NTU COOL regularly.

Download lecture notes, homeworks, and solutions at

<http://www.fin.ntu.edu.tw/~cchen/>.

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This course is a sequel to the course *Game Theory with Applications to Finance and Marketing, I*, and it consists of four parts. Part I gives a short review to implementation theory, and Part II gives an introduction to the auction theory. Part III reviews the theory of financial contracts, and then Part IV reviews one subject which is relevant in a disruptive era, namely the online competing platforms.

There will be homework assignments due regularly and take-home midterm and final exams.

The tentative schedule is as follows.

- Implementation Theory. (Weeks 1-4.) We shall cover basic ideas in Nash implementation, Subgame-perfect Nash implementation, and Bayesian implementation.
 1. Chen, C.-M., 2020, Basic Ideas in Implementation Theory, Lecture Note.
 2. Maskin, E., and T. Sjöström, 2001, Implementation Theory, Chapter 5 in *Handbook of Social Choice and Welfare*, Volume 1, Edited by K.J Arrow, A.K. Sen and K. Suzumura, Amsterdam: Elsevier.

3. Jackson, M., 2001, A Crash Course in Implementation Theory, *Social Choice and Welfare*, 18, 655-708.
- Auction Theory. (Weeks 5-8.) We shall cover private-value models, common-value models, affiliated-value models, mechanism design, and the multi-object auctions.
 1. Klemperer, P., 1999, Auction Theory: A Guide to the Literature, *Journal of Economic Surveys*, 13(3), 227-286.
 2. Klemperer, P., 2004, Auctions: Theory and Practice, Princeton University Press.
 3. Krishna, V., 2002, Auction Theory, Amsterdam: Elsevier.
 4. Milgrom, P., 2004, Putting Auction Theory to Work, Cambridge: Cambridge University Press.
 5. Wilson, R., 1992, Strategic Analysis of Auctions, in *Handbook of Game Theory*, Volume 1.
 - Theory of Financial Contracts. (Weeks 9-12.)
 1. Chen, C.-M., 2017, An Introduction to the Theory of Corporate Finance, Lecture Note.
 2. Chen, C.-M., 2017, Corporate Financing Decisions and Product Market Competition, Lecture Note.
 - Competing Platforms (Two-sided Markets.) (Weeks 13-16.)
 1. Armstrong, M., and J. Wright, 2007, Two-Sided Markets, Competitive Bottlenecks and Exclusive Contracts, *Economic Theory*, 32, 353-380.
 2. Biais, B., T. Foucault, and F. Salanié, 1998, Floors, Dealer Markets and Limit Order Markets, 1, 253-284.
 3. Ellison, G., and D. Fudenberg, 2003, Knife-edge or Plateau: When do Market Models Tip? *Quarterly Journal of Economics*, 118, 1249-1278.
 4. Foucault, T., and C. Parlour, 2004, Competition for Listings, *Rand Journal of Economics*, 35, 329-355.

5. Hájíu, A., 2006, Pricing and Commitment by Two-Sided Platforms, *Rand Journal of Economics*, 37, 702-737.
 6. Vallée, B., and Y. Zeng, 2019, Marketplace Lending: A New Banking Paradigm? *Review of Financial Studies*, 32(5), 1939-1982.
 7. Vanasco, V., 2017, The Downside of Asset Screening for Market Liquidity, *Journal of Finance*, 72, 1937-1981.
- Other Topics.
 1. Bolton, P., and M. Dewatripont, 2012, Authority in Organizations: A Survey, in *The Handbook of Organizational Economics*, edited by Robert Gibbons and John Roberts, Princeton University Press.
 2. Jackson, M., B. Rogers, and Y. Zenou, 2021, Networks: An Economic Perspective, in *The Oxford Handbook of Social Networks*, edited by Ryan Light and James Moody, Oxford University Press.
 3. Roth, A. E., and M. Sotomayor, 1992, Two-sided Matching, Chapter 16 of *Handbook of Game Theory*, Volume 1, edited by R. J. Aumann and S. Hart, Elsevier.