

ECON 8400-002: Topics in Industrial Organization
Course Syllabus

University of Pennsylvania, Spring 2025
Tuesdays, 3:30-6:30 pm
Room: PCPE 202

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Course description. The goal of this course is to prepare students to conduct original research at the frontier of empirical industrial organization. Some lectures will introduce some core topics in IO (such as antitrust, conduct, and mergers) and some other lectures will cover standard methods in the field. There will also be lectures about prevalent topics in recent research such as asymmetric information, choice frictions, vertical relations, search, quality, pricing, platforms, and auctions. Other lectures will be devoted to help students develop and present an original research idea.

Prerequisites. This course presumes knowledge of graduate-level microeconomic theory and econometrics.

Requirements. The grade will be based on a research proposal, a problem set, and an in-class presentation of a paper. The grade for the research proposal will be based on a preliminary proposal, an in-class presentation, and a final writeup.

Course schedule

Date	Lecture
Jan 21	1. Introduction — Pricing 1
Jan 28	2. Pricing 2
Feb 4	3. Production functions
Feb 11	4. Selection markets
Feb 18	Paper presentations - Preliminary proposal due
Feb 25	Paper presentations
Mar 4	Proposal feedback
Mar 11	<i>Spring break</i>
Mar 18	5. Dynamics
Mar 25	6. Quality, search, and choice frictions 1
Apr 1	7. Quality, search, and choice frictions 2 - Problem set due
Apr 8	8. Platforms
Apr 15	9. Auctions
Apr 22	Proposal presentations
Apr 29	Proposal presentations

Final proposal due May 6

Reading list. This list constitutes a tentative outline of the topics we will cover in class, including papers we will discuss (the list may change or expand as the term progresses).

1. Pricing

- Varian, Hal R. “Price discrimination.” *Handbook of Industrial Organization* 1 (1989): 597-654.
- Leslie, Phillip. “Price discrimination in Broadway theater.” *RAND Journal of Economics* (2004): 520-541.
- Hendel, Igal and Aviv Nevo, “Intertemporal Price Discrimination in Storable Goods Markets,” *American Economic Review*, 2013, 103 (7), 2722–51.
- DellaVigna, Stefano, and Matthew Gentzkow. “Uniform pricing in us retail chains.” *Quarterly Journal of Economics* 134.4 (2019): 2011-2084.
- Dubé, Jean-Pierre, and Sanjog Misra. “Personalized pricing and customer welfare.” *Journal of Political Economy*, 131.1 (202): 131-189.
- Williams, Kevin R. The welfare effects of dynamic pricing: Evidence from airline markets. *Econometrica*, 90.2 (2022): 831-858.
- Castillo, Juan Camilo. “Who Benefits from Surge Pricing?.” Working paper, 2020.
- Calvano, Emilio, et al. “Artificial intelligence, algorithmic pricing, and collusion.” *American Economic Review* 110.10 (2020): 3267-97.

2. Production functions

- Akerberg, D.A., Caves, K. and Frazer, G., (2015) “Identification properties of recent production function estimators.” *Econometrica*
- Arellano M, Bond S. “Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations”. *The review of economic studies*
- Blundell, R. and Bond, S. (1998) “Initial conditions and moment restrictions in dynamic panel data models.” *Journal of econometrics*
- De Loecker, J., 2011. “Recovering markups from production data”. *International Journal of Industrial Organization*
- Gandhi, A., Navarro, S. and Rivers, D.A. (2020) “On the identification of gross output production functions.” *Journal of Political Economy*
- Levinsohn, J. and Petrin, A. (2003). “Estimating production functions using inputs to control for unobservables.” *The review of economic studies*
- Olley G. S., and Pakes A. (1996) “The dynamics of productivity in the telecommunications equipment industry”. *Econometrica*

3. Selection Markets

- Adams, Einav and Levin (2009) “Liquidity Constraints and Imperfect Information in Subprime Lending”, *American Economic Review*
- Bundorf, K, J. Levin and N. Mahoney (2012) “Pricing and Welfare in Health Plan Choice”, *American Economic Review*
- Einav, L. A. Finkelstein, and M. Cullen (2010) “Estimating Welfare in Insurance Markets using Variation in Prices”, *QJE*
- Einav, L. Jenkins, and Levin (2012) “Contract Pricing in Consumer Credit Markets”, *Econometrica*

- Cardon, J. and I. Hendel (2001) “Asymmetric Information in Health Insurance: Evidence from the National Medical Expenditure Survey”, *The RAND Journal of Economics*
- A. Cohen and L. Einav (2007) “Estimating Risk Preferences from Deductible Choice”, *American Economic Review*
- Handel, B, I. Hendel and M. Whinston (2015) “Equilibria in Health Insurance Exchanges: Adverse Selection versus Reclassification Risk”, *Econometrica*
- Handel, B, I. Hendel and M. Whinston (2017) “The Welfare Effects of Long Term Contracts”,

4. Dynamics

- Rust, John. “Optimal Replacement of GMC Bus Engines: An Empirical Model of Harold Zurcher.” *Econometrica* 55(5) (1987): 999-1033.
- Hotz, Joseph V. and Robert A. Miller. “Conditional Choice Probabilities and the Estimation of Dynamic Models.” *Review of Economic Studies* 60(3) (1993): 497–529.
- Aguirregabiria, Victor and Pedro Mira. “Swapping the Nested Fixed Point Algorithm: A Class of Estimators for Discrete Markov Decision Models.” *Econometrica* 70(4) (2003): 1519-1543.
- Aguirregabiria, Victor and Pedro Mira. “Sequential Estimation of Dynamic Discrete Games.” *Econometrica* 75(1) (2007): 1-53.
- Pakes, Ariel, Michael Ostrovsky and Steven T. Berry. “Simple estimators for the parameters of discrete dynamic games (with entry/exit examples).” *RAND Journal of Economics* 38(2) (2007): 373-399.
- Bajari, Patrick, C. Lanier Benkard and Jonathan Levin . “Estimating Dynamic Models of Imperfect Competition.” *Econometrica* 75(5) (2007): 1331-1370.

5. Quality

- Atal JP, Cuesta JI, Sæthre M. (2022) “Quality regulation and competition: Evidence from pharmaceutical markets.” *NBER WP*
- Bronnenberg, B. JP Dubé, M. Gentzkow and J. Shapiro (2015), “Do Pharmacists Buy Bayer? Informed Shoppers and the Brand Premium”, *QJE*
- Dafny, L. and D. Dranove (2008), “Do Report Cards Tell Consumers Anything They Don't Already Know? The Case of Medicare HMOs.” *The Rand Journal of Economics*
- T. Gilligan (2004) “Lemons and Leases in the Used Business Aircraft Market” *JPE*
- Hotz, J. and M. Xiao (2011) “The Impact of Regulations on the Supply and Quality of Care in Child Care Markets”, *American Economic Review*
- Jin, G.Z. and P. Leslie (2003), “The effect of information on product quality: evidence from hygiene report cards”, *QJE*

6. Search

- Brown J. and A. Golsbee (2002), “Does the Internet Make Markets More Competitive? Evidence from the Life Insurance Industry”, *JPE*
- Diamond, Peter (1971) “A Model of Price Adjustment” *Journal of Economic Theory* 3 156-168.
- Ellison, Glenn and Sara Fisher Ellison “Search, Obfuscation, and Price Elasticities on the Internet,” *Econometrica* 77(2): 427-452.

- Hortacsu, Ali and Chad Syverson (2004), “Product Differentiation, Search Costs, and Competition in the Mutual Fund Industry: A Case Study of SP 500 Index Funds,” *The Quarterly Journal of Economics*, 119 (2), 403–456.
- Seim, Katja, Maria Ana Vitorino and David M. Muir (2017) “Drip Pricing When Consumers Have Limited Foresight: Evidence from Diving School Fees” *Working Paper*.
- Sorenson, Alan (2000) “Equilibrium Price Dispersion in Retail Markets for Prescription Drugs” *Journal of Political Economy* 108: 833-850.
- Stahl, Dale O. (1993) “Oligopolistic Pricing with Heterogeneous Consumer Search” *International Journal of Industrial Organization* 14: 243-268.

7. Choice Frictions

- Abaluck, J. and J. Gruber (2011), “Choice Inconsistencies among the Elderly: Evidence from Plan Choice in the Medicare Part D Program,” *American Economic Review*
- Handel, B (2013), “Adverse selection and inertia in health insurance markets: When nudging hurts”. *American Economic Review* 103 (7), 2643–2682.
- Handel, B. and J. Kolstad, (2015) “Health Insurance for Humans: Information Frictions, Plan Choice, and Consumer Welfare” *American Economic Review*
- Honka, E. 2015 “Quantifying Search and Switching Costs in the US Auto Insurance Industry”, *RAND Journal of Economics*
- Bhargava, S, G. Loewenstein, G and Sydnor, J (2015). “Do Individuals Make Sensible Health Insurance Decisions? Evidence from a Menu with Dominated Options”

8. Platforms and network effects

- Katz, Michael L., and Carl Shapiro. “Network externalities, competition, and compatibility.” *American Economic Review* 75.3 (1985): 424-440.
- Weyl, E. Glen. “A price theory of multi-sided platforms.” *American Economic Review* 100.4 (2010): 1642-72.
- Rysman, Marc. “Competition between networks: A study of the market for yellow pages.” *Review of Economic Studies* 71.2 (2004): 483-512.
- Farronato, Chiara, and Andrey Fradkin. “The welfare effects of peer entry in the accommodation market: The case of airbnb.” *American Economic Review*, 112.6 (2020): 1782-1817.
- Rosaia, Nicola. “Competing platforms and transport equilibrium: Evidence from New York City.” Working Paper, 2020.
- Calder-Wang, Sophie. “The Distributional Impact of the Sharing Economy on the Housing Market.” Working paper, 2022.
- Almagro, Milena and Tomás Dominguez-Iino. “Location Sorting and Endogenous Amenities: Evidence from Amsterdam.” Working Paper, 2022.

9. Auctions

- Milgrom, Paul R., and Robert J. Weber. “A theory of auctions and competitive bidding.” *Econometrica* (1982): 1089-1122.
- Hortacsu, Ali, and Isabel Perrigne. “Empirical Perspectives on auctions.” *Handbook of Industrial Organization* (2021).
- Hendricks, Kenneth, and Robert H. Porter. “An empirical study of an auction with asymmetric information.” *American Economic Review* (1988): 865-883.

- Guerre, Emmanuel, Isabelle Perrigne, and Quang Vuong. “Optimal nonparametric estimation of first-price auctions.” *Econometrica* 68.3 (2000): 525-574.
- Athey, Susan, Jonathan Levin, and Enrique Seira. “Comparing open and sealed bid auctions: Evidence from timber auctions.” *The Quarterly Journal of Economics* 126.1 (2011): 207-257.
- Hortagsu, Ali, and Steven L. Puller. “Understanding strategic bidding in multi-unit auctions: a case study of the Texas electricity spot market.” *RAND Journal of Economics* 39.1 (2008): 86-114.
- Asker, John. 2010. “A Study of the Internal Organization of a Bidding Cartel.” *American Economic Review*, 100 (3): 724-62.
- Budish, Eric, Peter Cramton, and John Shim. “The high-frequency trading arms race: Frequent batch auctions as a market design response.” *Quarterly Journal of Economics* 130.4 (2015): 1547-1621.