

ECON 5620 Theory of Industrial Organization Course Outline

Instructor

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Office hours: Mondays 3:00-5:00 p.m. (Zoom meeting code: 225-338-8641)

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Course Webpage: <https://canvas.ust.hk>

Lecture time: Fridays 09:00a.m.-12:50 p.m.

Lecture venue: Room 5566, Lift 27-28 (Zoom meeting until further notice)

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Course Description

This course focuses on guiding students to conduct theoretical research on the following topics in IO and applied theory, including antitrust economics, relational contracts, consumer search, mechanism design, bargaining and information disclosure/design. Familiarity of first-year-PhD-level game theory is expected (though we will quickly review the basics). Other selected IO/applied theory topics will be covered if time permits. For preparation of conducting research on related topics, students are required to write a research paper.

1 Course Objective

Upon completion of this course, you will be able to

1. Use industrial organization concepts or theories acquired through this course to explain and analyze real-life economic issues;
2. Form your own opinion on the contributions of a research paper and propose potential follow-up research projects;
3. Develop simple theoretical models to conduct industrial organization research.

Textbook

There is no required textbook. The following books are great references for any budding (IO/applied) theorists.

- Tirole, J., 1988. The Theory of Industrial Organization. MIT Press.
- Belleflamme, P. and Peitz, M., 2015. Industrial Organization: Markets and Strategies. Cambridge University Press.
- Mailath, G.J. and Samuelson, L., 2006. Repeated Games and Reputations: Long-run Relationships. Oxford University Press.
- Spiegler, R., 2011. Bounded Rationality and Industrial Organization. Oxford University Press.
- Krishna, V. 2009. Auction Theory. Academic Press.
- Milgrom, P. 2004. Putting Auction Theory to Work. Cambridge University Press.
- Bolton, P. and Dewatripont, M., 2005. Contract Theory. MIT press.
- Tirole, J., 2010. The Theory of Corporate Finance. Princeton University Press.

Assessment

Problem Sets	20%
Research Paper	40%
Final Test	40%

About the paper

- Objective: develop a research proposal that can be turned into a dissertation chapter.
- Length: at least 8 pages (excluding title page and refereces).
- The paper should contain the following items.
 - Title
 - Abstract: gvies a summary less than 200 words
 - Introduction: motivates the project, outlines the model, states the results/conjectures (in words, no equation), explains the intuition, discusses their significance and applicabilities.
 - Literature review: discuss related papers.
 - Model setup: states all the assumptions of the model.

- Results: states the results/conjectures formally, and explains in more details their intuition. If possible, prove the results; if not, provide examples (numerical or with extra simplifying assumptions) to illustrate the idea.
- Plan: suggests possible directions of further development of the proposal.

Lecture Plan

- Classical models and strategic commitment (1 lecture)
- Repeated games and applications (2 lectures)
- Contracting under moral hazard (1 lecture)
- Consumer search (2 lectures)
- Bayesian games and auctions (1 lecture)
- Mechanism design (2 lectures)
- Bargaining/Durable-goods monopoly (1 lecture)
- Disclosure (1 lecture)
- Bounded rationality in IO (1 lecture)

Reading List

Classical models and Strategic commitment (1 lecture)

- Tirole, Chapter 5, 8
- Whinston, M.D., 1990. Tying, Foreclosure, and Exclusion. *American Economic Review*, 80(4), pp. 837-859.
- Aghion, P. and Bolton, P., 1987. Contracts as a Barrier to Entry. *American Economic Review*, pp. 388-401.

Repeated games and Applications

- Mailath and Samuelson, Chapter 2 and 7
- Green, E.J. and Porter, R.H., 1984. Noncooperative collusion under imperfect price information. *Econometrica*, pp.87-100.

- Abreu, D., Pearce, D. and Stacchetti, E., 1990. Toward a theory of discounted repeated games with imperfect monitoring. *Econometrica*, pp.1041-1063.
- Abreu, D., 1988. On the theory of infinitely repeated games with discounting. *Econometrica*, pp.383-396.
- Abreu, D., Milgrom, P. and Pearce, D., 1991. Information and timing in repeated partnerships. *Econometrica*, pp.1713-1733.
- Halac, M., 2012. Relational contracts and the value of relationships. *American Economic Review*, 102(2), pp.750-79.
- Garicano, L. and Rayo, L., 2017. Relational knowledge transfers. *American Economic Review*, 107(9), pp.2695-2730.
- Levin, J., 2003. Relational incentive contracts. *American Economic Review*, 93(3), pp.835-857.
- Li, J. and Matouschek, N., 2013. Managing conflicts in relational contracts. *American Economic Review*, 103(6), pp.2328-51.
- Baker, G., Gibbons, R. and Murphy, K.J., 2002. Relational Contracts and the Theory of the Firm. *The Quarterly Journal of Economics*, 117(1), pp.39-84.
- Levin, J., 2002. Multilateral contracting and the employment relationship. *The Quarterly Journal of Economics*, 117(3), pp.1075-1103.
- MacLeod, W.B. and Malcomson, J.M., 1989. Implicit contracts, incentive compatibility, and involuntary unemployment. *Econometrica*, pp.447-480.

Contracting under Moral Hazard

- Fuchs, W., 2007. Contracting with repeated moral hazard and private evaluations. *American Economic Review*, 97(4), pp.1432-1448.
- MacLeod, W.B., 2003. Optimal contracting with subjective evaluation. *American Economic Review*, 93(1), pp.216-240.
- Shapiro, C. and Stiglitz, J.E., 1984. Equilibrium unemployment as a worker discipline device. *The American Economic Review*, 74(3), pp.433-444.
- Laux, C., 2001. Limited-liability and incentive contracting with multiple projects. *RAND Journal of Economics*, pp.514-526.
- Che, Y.K. and Yoo, S.W., 2001. Optimal incentives for teams. *American Economic Review*, 91(3), pp.525-541.

- Rajan, M.V. and Reichelstein, S., 2009. Objective versus subjective indicators of managerial performance. *The Accounting Review*, 84(1), pp.209-237.
- Prendergast, C., 1999. The provision of incentives in firms. *Journal of Economic Literature*, 37(1), pp.7-63.

Consumer Search

- Varian, H.R., 1980. A model of sales. *American Economic Review*, 70(4), pp.651-659.
- Burdett, K. and Judd, K.L., 1983. Equilibrium price dispersion. *Econometrica*, pp.955-969.
- Anderson, S.P. and Renault, R., 1999. Pricing, product diversity, and search costs: A Bertrand-Chamberlin-Diamond model. *RAND Journal of Economics*, pp.719-735.
- Diamond, P.A., 1971. A model of price adjustment. *Journal of Economic Theory*, 3(2), pp.156-168.
- Wolinsky, A., 1986. True monopolistic competition as a result of imperfect information. *Quarterly Journal of Economics*, 101(3), pp.493-511.
- Weitzman, M.L., 1979. Optimal search for the best alternative. *Econometrica*, pp.641-654.
- Stahl, D.O., 1989. Oligopolistic pricing with sequential consumer search. *American Economic Review*, pp.700-712.
- Bar-Isaac, H., Caruana, G. and Cuñat, V., 2012. Search, design, and market structure. *American Economic Review*, 102(2), pp.1140-60.
- Armstrong, M., Vickers, J. and Zhou, J., 2009. Prominence and consumer search. *The RAND Journal of Economics*, 40(2), pp.209-233.

Bayesian Games and Auction

- Krishna, Chapter 2-5
- Milgrom, Chapter 3
- Milgrom, P. and Segal, I., 2002. Envelope theorems for arbitrary choice sets. *Econometrica*, 70(2), pp.583-601.
- Bulow, J. and Klemperer, P., 1999. The generalized war of attrition. *American Economic Review*, 89(1), pp.175-189.
- Bulow, J. and Klemperer, P., 1994. Rational frenzies and crashes. *Journal of Political Economy*, 102(1), pp.1-23.

Mechanism Design

- Myerson, R.B., 1981. Optimal auction design. *Mathematics of Operations Research*, 6(1), pp.58-73.
- Cramton, P., Gibbons, R. and Klemperer, P., 1987. Dissolving a partnership efficiently. *Econometrica*, pp.615-632.
- Courty, P. and Hao, L., 2000. Sequential screening. *Review of Economic Studies*, 67(4), pp.697-717.
- Pavan, A., Segal, I. and Toikka, J., 2014. Dynamic mechanism design: A myersonian approach. *Econometrica*, 82(2), pp.601-653.
- Rochet, J.C. and Stole, L.A., 2002. Nonlinear pricing with random participation. *Review of Economic Studies*, 69(1), pp.277-311.

Bargaining/Durable-goods Monopoly

- Fudenberg, D., Levine D. and Tirole, J., 1985. Infinite-horizon models of bargaining with one-Sided incomplete information. In *Game Theoretic Models of Bargaining*, ed. Roth, A., 73-98. Cambridge, MA: Cambridge University Press.
- Ausubel, L.M. and Deneckere, R.J., 1989. Reputation in bargaining and durable goods monopoly. *Econometrica*, pp.511-531.
- Fuchs, W. and Skrzypacz, A., 2010. Bargaining with arrival of new traders. *American Economic Review*, 100(3), pp.802-36.
- Board, S. and Pycia, M., 2014. Outside options and the failure of the Coase conjecture. *American Economic Review*, 104(2), pp.656-71.
- Dudine, P., Hendel, I. and Lizzeri, A., 2006. Storable good monopoly: The role of commitment. *American Economic Review*, 96(5), pp.1706-1719.
- Waldman, M., 2003. Durable goods theory for real world markets. *Journal of Economic Perspectives*, 17(1), pp.131-154.

Disclosure

- Johnson, J.P. and Myatt, D.P., 2006. On the simple economics of advertising, marketing, and product design. *American Economic Review*, 96(3), pp.756-784.
- Robert, J. and Stahl, D.O., 1993. Informative price advertising in a sequential search model. *Econometrica*, pp.657-686.

- Kamenica, E. and Gentzkow, M., 2011. Bayesian persuasion. *American Economic Review*, 101(6), pp.2590-2615.
- Milgrom, P., 2008. What the seller won't tell you: Persuasion and disclosure in markets. *Journal of Economic Perspectives*, 22(2), pp.115-131.

Bounded rationality in IO

- Spiegler Chapter 2-5
- DellaVigna, S. and Malmendier, U., 2004. Contract design and self-control: Theory and evidence. *Quarterly Journal of Economics*, 119(2), pp.353-402.
- Grubb, M.D., 2009. Selling to overconfident consumers. *American Economic Review*, 99(5), pp.1770-1807.