

ECP-5405
Industrial Organization
Fall 2008

Professor: Tim Salmon
Office: BEL 263, 644-7207
Email: tsalmon@ fsu.edu

Meeting Times: T-TH 9:30-10:45
Location: BEL 203
Office Hours: T-TH 11:00-12:00

Course Description:

This class will cover a broad overview of the tools used in modern theory of Industrial Organization. As the tools of modern IO borrow heavily from formal Game Theory, the class will involve heavy use of Game Theoretic methodologies. The class will be presented mostly through the discussion of important papers in the field but some of the material will be supplemented by the course texts.

Course Texts: (none are required but students will find the first quite useful)

1. *Industrial Organization*, by Jean Tirole, 1988, MIT Press, ISBN 0-262-20071-6
2. *Industrial Organization*, by Oz Shy, 1995, MIT Press, ISBN 0-262-69179-5
3. *Readings in Industrial Organization*, edited by Luis M.B. Cabral, 2000, Blackwell Publishers, ISBN 0-631-21617-0

Grading:

Grades in this class will come from multiple sources. There will be a midterm exam worth 25% of the final grade, 1-2 paper presentations worth 20-10% each, and a final paper/final exam worth 35%. In addition there will be occasional homework assignments worth 20%.

The paper presentation portion of the grading will require each student to present 1-2 (depends on the number of students enrolled) of the papers for the course to the class. A written report on the paper will also be required, due on the day the oral presentation is made. The focus of these reports will be for the student to teach the material to the rest of the class and to comment on the substance of the material. Students should look over the articles below and choose one they would like to present and get approval from me. If there is an IO article on a topic not included below that the student would like to present instead, this may be acceptable. Again, see me for approval.

There will be an option of completing a paper for the course or taking a final exam. Students are strongly encouraged to write the paper as this will be a much more valuable exercise. My assumption is that everyone will be writing the paper and you must get permission from me to take an exam instead. The paper should have some relationship to IO and must contain some theoretical content. This could include a purely theoretical paper or an empirical (field or experimental) paper aimed at testing the implications of a model. I will be quite flexible on topics and content as the main idea of the paper is to

give you experience writing and in working with building your own theoretical model. The exact field the work fits in is of less importance.

The paper will be completed in three different stages. The first stage will involve you turning in a Topic Overview which will be due in the 6th week of the course (**October 9**). This overview will be a short (less than one page) description of the fundamental research question your paper will deal with. The Overview should state that question, explain why answering it is interesting or worthwhile and briefly propose how you intend to address it. The second stage will involve turning in a First Draft of the paper. This should be a version of the paper that is quite close to completed. It should have a fully fleshed out introduction including a review of the related literature and a presentation of the model. If there are a few details you have not quite finished, that will be acceptable but it should be a substantial draft and enough for me to clearly see the structure of the paper. This will be due in the 12th week (**November 20**). When you turn in your first draft I will read over it and provide a referee report on it modeled after what you would get if you submitted the paper to a journal. It will tell you what you will need to do to improve the paper for the final draft which will be due on the first day of finals week (**December 8**). Late submissions of any stage lose 5 points a day. There will be 100 points available on the paper. 15 of them will come from turning in a suitable topic description on time. 35 will be based on the quality of the first draft. The final 50 will be based on the overall quality of the final paper and on how well you were able to deal with the comments and suggestions made on your first draft. The higher the quality of the first draft, the fewer comments and suggestions you will have to deal with for the final version.

Course Outline:

- I. Monopoly Theory
 - a. General Reading
 - i. Tirole, Part I
 - ii. Shy, Chapter 5
 - b. Durable Goods
 - i. Tirole 72-3, 79-87
 - ii. Pesendorfer, W “Design Innovation and Fashion Cycles,” *American Economic Review* v85, n4 (September 1995): 771-92.
 - iii. J. Bulow, “Durable Goods Monopolists,” *Journal of Political Economy*, Vol. 90, No 2 pp. 314-332 (1982).
 - iv. R. Coase, “Durability and Monopoly,” *Journal of Law and Economics*, v15, n1 (April 1972): 143-49

- II. Static Monopolistic Competition / Oligopoly Theory
 - a. General Reading
 - i. Tirole, Chapters, 5-8
 - ii. Shy, Chapters 6-8
 - b. Quantity Competition
 - i. Amir, R and V Lambson, “On the Effects of Entry in Cournot Markets” *Review of Economic Studies* v67, n2 (April 2000): 235-54.

- ii. Novshek, William, "Cournot Equilibrium with Free Entry," *The Review of Economic Studies*, Vol. 47, No. 3. (Apr., 1980), pp. 473-486.
 - c. Price Competition with Differentiated Products
 - i. Deneckere, Raymond and Michael Rothschild, "Monopolistic Competition and Preference Diversity," *Review of Economic Studies*, Vol. 59 No. 2 (Apr. 1992), pp. 361-373.
 - d. Price Competition With Search
 - i. Diamond, Peter, "A Model of Price Adjustment," *Journal of Economic Theory* v3, n2 (June 1971): 156-68.
 - ii. Anderson, Simon and Regis Renault, "Pricing, Product Diversity and Search Costs: A Bertrand-Chamberlain-Diamond Model," *RAND Journal of Economics* v30, n4 (Winter 1999): 719-35.
 - iii. Stahl, Dale O., "Oligopolistic Pricing with Heterogeneous Consumer Search," *International Journal of Industrial Organization*, 14 (1996): 243-268.
 - e. Managerial Considerations
 - i. Fershtman, Chaim and Kenneth L. Judd, "Equilibrium Incentives in Oligopoly," *The American Economic Review*, Vol. 77, No. 5. (Dec., 1987), pp. 927-940.
 - ii. Holmstrom, Bengt, "Managerial Incentive Problems: A Dynamic Perspective," *The Review of Economics Studies*, Vol. 66, No. 1 (Jan 1999): 169-182.
 - iii. Holmström, B. and J. Roberts, "The Boundaries of the Firm Revisited," *Journal of Economic Perspectives* 12(4), (1998): 73-94.
- III. Horizontal and Vertical Integration
- a. Vertical Relationships
 - i. Bernheim, B. Douglas and Michael D. Whinston, "Exclusive Dealing," *Journal of Political Economy*, (February 1998), pp. 64-103.
 - ii. Deneckere, Raymond, Howard P. Marvel and James Peck, "Demand Uncertainty and Price Maintenance: Markdowns as Destructive Competition," *American Economic Review*, Vol. 87, No. 4 (Sep 1997): 619-641.
 - iii. Deneckere, Raymond, Howard P. Marvel and James Peck, "Demand Uncertainty, Inventories and Resale Price Maintenance," *Quarterly Journal of Economics*, Vol. 111, No. 3 (Aug 1996), 885-913.
 - iv. Mathewson, Frank and Ralph Winter, "The Law and Economics of Resale Price Maintenance," *Review of Industrial Organization*, Vol. 13 (1998): 57-84.
 - v. Ordoover, Saloner, and Salop, "Equilibrium Vertical Foreclosure," *American Economic Review*, Vol. 80 (March 1990): 127-142.
 - vi. Whinston, Michael D. "Tying, Foreclosure, and Exclusion," *American Economic Review*, Vol. 80 (September 1990): 837-859.
 - b. Horizontal Relationships

- i. Deneckere, Raymond and Carl Davidson, "Incentives to Form Coalitions with Bertrand Competition," *RAND Journal of Economics*, 16 (Winter 1985): 473-486.
- ii. Farrell, Joseph and Carl Shapiro, "Horizontal Mergers: An Equilibrium Analysis," *American Economic Review*, Vol. 80 (March 1990): 107-126.
- iii. US Department of Justice, Horizontal Merger Guidelines: http://www.usdoj.gov/atr/public/guidelines/horiz_book/hmg1.html
- iv. Gowrisankaran, G., "A dynamic model of endogenous horizontal mergers", *Rand Journal of Economics* 30(1), 1999:56-83.
- v. Pesendorfer, Martin, "Mergers under Entry," *Rand Journal of Economics*, 36 (2005), 661-679.
- vi. Chen, Jiawei, "The Effects of Mergers with Dynamic Capacity Accumulation," U. of California-Irvine, March 2006.

IV. Dynamic Models of Oligopoly Behavior

a. Noncollusive

- i. Maskin, Eric and Jean Tirole, "A Theory of Dynamic Oligopoly I: Overview and Quantity Competition and Large Fixed Costs," *Econometrica*, Vol. 56, No. 3. (May, 1988), pp. 549-569.
- ii. Maskin, Eric and Jean Tirole, "A Theory of Dynamic Oligopoly II: Price Competition, Kinked Demand Curves and Edgeworth Cycles," *Econometrica*, Vol. 56, No. 3. (May, 1988), pp. 571-599.
- iii. Besanko, David and Ulrich Doraszelski, "Capacity Dynamics and Endogenous Asymmetries in Firm Size," *Rand Journal of Economics*, 35 (2004), 23-49.
- iv. Maskin, Eric and Jean Tirole, "Markov Perfect Equilibrium, I: Observable Actions," *Journal of Economic Theory*, 100 (2001), 191-219.
- v. Pakes, Ariel, "A Framework for Applied Dynamic Analysis in I.O.," NBER Working Paper 8024, December 2000.
- vi. Pakes, Ariel and Paul McGuire, "Computing Markov Perfect Nash Equilibrium: Numerical Implications of a Dynamic Differentiated Product Model," *Rand Journal of Economics*, 25 (1994), 555-589.

b. Collusive Models

- i. Abreu, Dilip, David Pearce and Ennio Stacchetti, "Optimal Cartel Equilibria with Imperfect Monitoring," *Journal of Economic Theory* v39, n1 (June 1986): 251-69.
- ii. Abreu, Dilip "Extremal Equilibria of Oligopolistic Supergames," *Journal of Economic Theory* v39, n1 (June 1986): 191-225.
- iii. Green, E and R Porter (1984): "Noncooperative Collusion Under Imperfect Price Information," *Econometrica*, Vol. 52, No. 1. (Jan., 1984), pp. 87-100.
- iv. Porter, Robert H "Optimal Cartel Trigger Price Strategies," *Journal of Economic Theory* v29, n2 (April 1983): 313-38.

- v. Rotemberg, Julio J. and Garth Saloner, "A Supergame-Theoretic Model of Price Wars During Booms," *The American Economics Review*, Vol 76, No. 3 (Jun 1986): 390-407.
- vi. Staiger, Robert W and Frank A Wolak "Collusive Pricing with Capacity Constraints in the Presence of Demand Uncertainty," *RAND Journal of Economics* v23, n2 (Summer 1992): 203-20.
- vii. Harrington, Joe, "Cartel Pricing Dynamics in the Presence of an Antitrust Authority," *RAND Journal of Economics*, Vol. 35, No. 4 (2004): 651-673.
- viii. Ferstman, Chaim and Ariel Pakes, "A Dynamic Oligopoly with Collusion and Price Wars," *RAND Journal of Economics*, 31 (2000), 207-236.

V. Non-Equilibrium Theories

- a. Alos-Ferrer, Carlos, Ana B. Ania and Klaus Reiner Schenk-Hoppe, "An Evolutionary Model of Bertrand Oligopoly," *Games and Economic Behavior* Vol 33, No 1 (October 2000) pp. 1-19.
- b. Keenan, Donald C and Mike J O'Brien "Competition, Collusion and Chaos" *Journal of Economic Dynamics And Control* (17)3 (1993) pp. 327-353.
- c. Marks, Robert E, "Breeding Hybrid Strategies: Optimal Behavior for Oligopolists" *Journal of Evolutionary Economics* v2, n1 (March 1992): 17-38.
- d. Schaffer, Mark E "Are Profit Maximizers the Best Survivors?" *JEBO* 12 (1989) 29-45.
- e. Vega-Rodondo, Fernando "The Evolution of Walrasian Behavior," *Econometrica* v65, n2 (March 1997): 375-84.

VI. Entry/Exit Process and the Dynamics of Firm Growth

- a. Bresnahan, Timothy F. and Peter C. Reiss, "Entry and Competition in Concentrated Markets," *The Journal of Political Economy*, Vol. 99, No. 5 (Oct 1991): 977-1009.
- b. Dixit, Avinash "Entry and Exit Decisions under Uncertainty" *The Journal of Political Economy*, Vol. 97, No. 3. (Jun., 1989), pp. 620-638.
- c. Jovanovic, Boyan, "Selection and the Evolution of Industry," *Econometrica*, Vol. 50, No. 3. (May, 1982), pp. 649-670.
- d. Nelson, Richard R and Sidney G Winter, *An Evolutionary Theory of Economic Change*, The Belknap Press of Harvard University Press, 1982.
- e. Pakes, Ariel and Richard Ericson, "Empirical Implications of Alternative Models of Firm Dynamics," *Journal of Economic Theory* v79, n1 (March 1998): 1-45
- f. Vega-Rodondo, Fernando, "Technological Change and Market Structure: An Evolutionary Approach" *Int. J. Industrial Organization* Vol. 14 (2) pp. 203-226.

VII. Market Dominance

- a. Tirole Chapter 9
- b. First Mover Advantage and Capital Commitment

- i. Tirole 8.2-8.6
 - ii. Dixit, Avinash “The Role of Investment in Entry Deterrence,” *The Economic Journal*, Vol. 90, No. 357. (Mar., 1980), pp. 95-106
 - iii. Fudenberg, Drew and Jean Tirole, “Capital as a Commitment: Strategic Investment to Deter Mobility,” *Journal of Economic Theory* v31, n2 (December 1983): 227-50.
 - iv. McLean, Richard P and Michael H Riordan, “Industry Structure with Sequential Technology Choice,” *Journal of Economic Theory* v47, n1 (February 1989): 1-21
- c. Limit Pricing
- i. Milgrom, Paul and John Roberts, “Limit Pricing and Entry Under Incomplete Information: An Equilibrium Analysis,” *Econometrica*, Vol. 50, No. 2. (Mar., 1982), pp. 443-460.
 - ii. Bagwell, Kyle and Garey Ramey, “Oligopoly Limit Pricing,” *RAND Journal of Economics* v22, n2 (Summer 1991): 155-72
 - iii. Bagwell, Kyle “A Model of Competitive Limit Pricing,” *Journal of Economics and Management Strategy* v1, n4 (Winter 1992): 585-606

VIII. Experimental Examinations of IO Topics

- a. General Reading
- i. C. Plott “An Updated Review of Industrial Organizational Applications of Experimental Methods,” *Handbook of Industrial Organization*
 - ii. Holt, Charles, “Industrial Organization: A Survey of Laboratory Research,” in *The Handbook of Experimental Economics*, edited by John Kagel and Al Roth, 1995, Princeton University Press.
- b. Selected Papers
- i. Grether, David M and Charles Plott, “The Effects of Market Practices in Oligopolistic Markets: An Experimental Examination of the *Ethyl* Case,” *Economic Inquiry*, Volume 24 (1984) pages 479-507.
 - ii. Hong, James T., and Charles Plott, “Rate Filing Policies for Inland Water Transportation: An Experimental Approach,” *Bell Journal of Economics*, Volume 13 (Spring 1982), pages 1-19.
 - iii. Isaac, Mark R. and Vernon Smith, “In Search of Predatory Pricing,” *Journal of Political Economy*, Volume 93, (1985), pages 320-345.
 - iv. Jung, Yun Joo, John H. Kagel, and Dan Levin, “On the Existence of Predatory Pricing: An Experimental Study of Reputation and Entry Deterrence in the Chain-Store Game,” *Rand Journal of Economics*, Vol. 25, No. 1 (Spring 1994), pages 72-93.
 - v. Smith, Vernon, “An Empirical Study of decentralized Institutions of Monopoly Restraint,” in *Essays in Contemporary Fields of Economics in Honor of E.T. Weiler (1914-1979)*, J. Quirk and G. Horwich Editors, West Lafayette: Purdue University Press. 83-106.

- vi. Brandts, Jordi, Anotonio Cabrales and Gary Charness, “Forward Induction in the Excess Capacity Puzzle: An Experimental Investigation,” Working Paper (2003)
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=486182

HONOR CODE: Academic dishonesty as it relates to tests in this course will not be tolerated in any form. The Academic Honor system of the Florida State University is based on the premise that each student has the responsibility to:

1. Uphold the highest standards of academic integrity in the student's own work;
2. Refuse to tolerate violations of academic integrity;
3. Foster a high sense of integrity and social responsibility.

Put simply, cheating will not be tolerated. If an instance of academic dishonesty takes place, all students involved will receive a zero for that exam and the grade may not be dropped.

AMERICAN DISABILITIES ACT STATEMENT: Students with disabilities needing academic accommodations should:

1. Register with and provide documentation to the Student Disability Resource Center (SDRC);
2. Bring a letter to the instructor from SDRC indicating that you need academic accommodations. This should be done within the first week of class.