

International College of Economics and Finance

INDUSTRIAL ORGANIZATION 2012-2013

Lecturers:

Kosmas Marinakis, Ph.D. (modules 1,2)

Alexis V.Belianin, Ph.D. (modules 3,4)

Classteacher:

Olga Ermolova, MSc

Course description

Industrial Organization (IO), aka *Industrial Economics*, or *Economics of Industry*, is a one-year course which is one of ‘further units’ of the external programme of the University of London (UoL). IO is one of the main ‘special’ economics courses. It utilizes techniques from microeconomic theory and econometrics to the study of firms as organizations, market structures, strategic interaction, market efficiency and industrial policy. An undergraduate IO course at ICEF is based on students’ knowledge of Intermediate Microeconomics and the first course of Econometrics. Inasmuch as many topics in modern IO require extensive use of game-theory. A few introductory classes will be used to review the relevant techniques and applications. Further reviews of specific topics from economic theory and econometrics will be included in course curriculum whenever necessary.

The programme of this course mostly follows the requirements of the University of London external programme as covered by the Study Guide, with some thematic extensions. The course consists of three major parts. The first part of the course constitutes a methodological and theoretical introduction into the tools, methods and approaches used all over the course. It provides a quick review of game theoretic concepts, followed by the discussion of the nature of markets, the firm and the agency relations within business organizations. The second part constitutes the core of the course, and covers imperfect competition in static and dynamic settings, theoretical and empirical studies of collusion, entry and accommodation, product differentiation, monopolistic behaviour, vertical integration and determinants of market structure. The third part is devoted to industrial policy and efficiency analysis, including government regulation and natural monopolies reforms with examples and applications.

Course Objectives

- Give a simple yet thorough introduction into the main methods of economic analysis of industry structure and firm behaviour under various conditions of technology, competition, and organization;
- Elaborate students’ skills and abilities to use modern theoretical and empirical tools to formulate and solve economic problems;
- Explore in details how economists approach and answer specific empirical questions, such as whether a particular industry is vertically integrated, whether there are is evidence of price collusion, or whether the industry has features of natural monopoly;
- Provide the students with a sound intuition into the specific features of particular markets, including those of transitional Russia.

Teaching methods

The following methods and forms of study are used in the course:

- lectures (2 hours a week)
- classes (2 hours a week, devoted to discuss home assignments and supplementary questions)
- home assignments (to be submitted before class)
- self-study.

There will be 66 hours of lectures and 66 hours of classes over the year. In the Fall semester, classes will be held on Saturdays, while lectures will normally be held on Tuesdays. Timetable for the Spring semester, the will be announced in due course. Given the limited number of contact hours, regular self study is crucial for successful completion of the course, including external examination.

Reading lists

There is no single textbook for the course, although the most valuable one is the (now classical) text by Jean Tirole. Another useful and more new text is that by Church and Ware. Both texts will be used throughout the course at a regular basis, alongside with the UoL Study Guide and Examiners' Reports. A few more texts will be used occasionally or for the sake of reference – these are listed as *supplementary readings*. Further references for each theme (mostly journal articles, with the relevant weblink) can be found below, with compulsory readings starred (*). Published sources may be complemented by lecture notes and other teaching material available at <http://mief.hse.ru>. Please check this source at regular rate, and pay attention to the other sources suggested by the course instructors.

Main readings

1. Tirole, Jean (Tir) The Theory of Industrial Organization. MIT Press, 1992.
2. Church J., and R.Ware. (CW) Industrial Organization. A Strategic Approach. Irwin. 2000.
3. Symeonidis, George. Industrial Economics. University of London Study Guide (SG), 1999 and Examiners' Reports (ER), various years.

Supplementary readings

4. Schmalensee, Richard, and Robert Willig, eds. (HB) Handbook of Industrial Organization. Vols. 1-2. North-Holland, 1989.
5. Shy, Oz. (Shy) Industrial Organization. Theory and Applications. MIT Press. 1995.
6. Carlton, Dennis W., and Jeffrey M. Perloff (CP) Industrial Organization. 3d ed. Addison-Wesley, 1999.
7. Martin, Stephen. (Mar) Industrial Economics. 2d ed. Prentice Hall. 1994.
8. Pepall, Lynne; Daniel J. Richards; George Norman. (PRN) Industrial Organization: Contemporary Theory and Practice. 2d. ed. South-Western, 2002.
9. Hay, D., and D.Morris. Industrial Economics and Organization. 2d ed. Oxford. 1996.
10. Milgrom, Paul, and John Roberts. Economics, Organization and Management. 1998. (Милгром П., Робертс Дж. Экономика, организация и менеджмент. Дело, 1999)
11. Sherer, F.M. and D.Ross. Industrial market structure and economic performance. Houghton Mifflin, 1990 (Шерер Ф.М. и Д. Росс. Структура отраслевых рынков. Инфра-М, 1997.)
12. Sutton, John. Sunk cost and market structure. MIT Press, 1991.

13. Armstrong, Mark, Simon Cowan and John Vickers. *Regulatory Reform: economic analysis and British experience*. MIT Press, 1994.

Other readings, including journal articles, are listed after particular topics.

Grading

Two examinations: the winter examination at the end of the Fall semester, and the final examination at the end of the Spring semester (this latter covers all course material). Besides, there will be one control work in the middle of the Fall semester. Home assignments are to be handled regularly, and also contribute to the final grade for the course. If the homework is late the instructor will grade it but the grade will not count towards your final grade.

External examination at the University of London takes place in May-June; its results do *not* count towards the final grade for the course at SU-HSE. IO is an integral part of the separately graded State Graduate Examination for the Russian degree programme (to be held in June); this examination will consist of the same type of questions as those in the other papers.

Course grades are determined as follows:

Fall semester

Home assignments – 30%

Midterm control work – 20%

Winter examination – 50%

Spring semester and final grade:

Home assignments – 30%

Fall semester grade – 20%

Final examination – 50%

Course outline

1. *Introduction to Industrial Organisation*

* [Mar], Ch. 1.

* [PRN], Ch. 1.

2. *Noncooperative games for applied analysis*

* Gibbons, Robert J. *A primer in game theory* (aka *Game theory for applied economists*). Addison-Wesley, 1993, ch.1 & 2.

* [Tir], Appendix on game theory.

– Osborne, Martin J., and Ariel Rubinstein. *A course in game theory*. MIT Press, 1995.

– Fudenberg, Drew, and Jean Tirole. *Noncooperative game theory for IO: introduction and overview*. In: [HB], ch.5.

3. *Size and structure of the firm*

* [Tir], The theory of the firm (Introductory chapter)

* [SG], ch.1

* Williamson O. *Transaction cost economics*. In: [HB], ch.3, *with* Williamson O. *Economic institutions of capitalism*. Free press, 1985, ch.2-3 (рус.пер:

- О.Уильямсон, Экономические институты капитализма, СПб, 1997; THESIS, 1993, #3, с.39-49, http://www.hse.ru/science/igiti/thesis3/3_1_3Willi.pdf).
- * Hart O. Firms, contracts and financial structure. OUP, 1995, ch.1-3.
 - * Monteverde, Kirk, and David J. Teece. Supplier Switching Costs and Vertical Integration in the Automobile Industry. *The Bell Journal of Economics*, Vol. 13, No. 1 (Spring, 1982), pp. 206-213
Stable URL: <http://links.jstor.org/sici?sici=0361-915X%28198221%2913%3A1%3C206%3ASSCAVI%3E2.0.CO%3B2-4>
 - * Joskow, Paul L. Contract Duration and Relationship-Specific Investments: Empirical Evidence from Coal Markets. *The American Economic Review*, Vol. 77, No. 1 (Mar., 1987), pp. 168-185
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198703%2977%3A1%3C168%3ACDARIE%3E2.0.CO%3B2-H>
 - [CP], ch.2
 - Grossman, Sanford, and Oliver Hart. The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. *Journal of Political Economy* (1986) 94(4): 691-719.
Stable URL: <http://links.jstor.org/sici?sici=0022-3808%28198608%2994%3A4%3C691%3ATCABOO%3E2.0.CO%3B2-F>
 - Hart, Oliver, and John Moore. Property rights and the nature of the firm. *Journal of Political Economy*, 1990, v.98, p.1119-1158.
Stable URL: <http://links.jstor.org/sici?sici=0022-3808%28199012%2998%3A6%3C1119%3APRATNO%3E2.0.CO%3B2-3>
 - Klein, Benjamin; Robert G. Crawford; Armen A. Alchian. Vertical Integration, Appropriable Rents, and the Competitive Contracting Process. *Journal of Law and Economics*, Vol. 21, No. 2 (Oct., 1978), pp. 297-326
Stable URL: <http://links.jstor.org/sici?sici=0022-2186%28197810%2921%3A2%3C297%3AVIARAT%3E2.0.CO%3B2-D>
 - Klein, Benjamin, and Kevin M. Murphy. Vertical Restraints as Contract Enforcement Mechanisms. *Journal of Law and Economics*, Vol. 31, No. 2 (Oct., 1988), pp. 265-297
Stable URL: <http://links.jstor.org/sici?sici=0022-2186%28198810%2931%3A2%3C265%3AVRACEM%3E2.0.CO%3B2-I>

4. *Agency theory, ownership and control*

- * [Tir], The theory of the firm (Introductory chapter)
- * [SG], ch.2
- * Nickell, Stephen J. Competition and Corporate Performance
The Journal of Political Economy, Vol. 104, No. 4 (Aug., 1996), pp. 724-746
Stable URL: <http://links.jstor.org/sici?sici=0022-3808%28199608%29104%3A4%3C724%3ACACP%3E2.0.CO%3B2-N>
- Holmstrom, Bengt and Jean Tirole. The theory of the firm. In: [HB], ch.2
- [CP], ch.2
- Laffont, Jean-Jacques and Ramon Martimort. The Principal-Agent theory. PUP, 2002.
- Hart, Oliver, Jean Tirole, Dennis Carlton, Oliver Williamson. Vertical integration and market foreclosure. *Brookings papers on economic activity*, 1990, p.205-286.
Stable URL: <http://links.jstor.org/sici?sici=1057-8641%281990%291990%3C205%3AVIAMF%3E2.0.CO%3B2-V>
- Salanie, Bertrand. Contract theory: a primer. MIT Press, 1997.

- Gibbons, R. Incentives between firms (and within). *Management Science*, v.51 , No.1, 2005, p. 2-17, http://econ-www.mit.edu/faculty/download_pdf.php?id=244
- Nickell S., Nocolitsas D., Dryden N. What makes firms perform well? *European Economic Review*, 1996, v.41, p.783-796. Stable URL: http://www.sciencedirect.com/science?_ob=ArticleURL&_aset=V-WA-A-W-AAC-MsSAYWW-UUA-U-AAWZBZCUAV-AAWBEVCYAV-WDYZUZYYB-AAC-U&_rdoc=39&_fmt=summary&_udi=B6V64-3SWYB3P-19&_coverDate=04%2F30%2F1997&_cdi=5804&_orig=search&_st=13&_sort=d&_view=c&_acct=C000056226&_version=1&_urlVersion=0&_userid=2124005&_md5=c12d1899adc4b57ad73fd48e00edbb6d

5. *Static price competition in oligopoly models*

- * [Tir], ch.5
- * [SG], ch.3
- [CP], ch.7
- [Shy], ch.6
- [Mar], ch.5
- Chapiro, Carl. Theory of oligopoly behavior. In: [HB], ch.6
- Kreps, David M., and Jose Scheinkman. Quantity precommitment and Bertrand competition yield Cournot outcomes. *Bell Journal of Economics*, vol.14, no.3, Autumn 1983, p.326-337.
Stable URL: <http://links.jstor.org/sici?sici=0361-915X%28198323%2914%3A2%3C326%3AQPABCY%3E2.0.CO%3B2-4>
- Bresnahan, Timothy F. Duopoly Models with Consistent Conjectures. *The American Economic Review*, Vol. 71, No. 5 (Dec., 1981), pp. 934-945
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198112%2971%3A5%3C934%3ADMWCC%3E2.0.CO%3B2-E>

6. *Dynamic price competition*

- * [Tir], ch.6
- * [SG], ch.4
- * [CP], ch.6-7
- * Porter, Robert H. Study of Cartel Stability: The Joint Executive Committee, 1880-1886. *The Bell Journal of Economics*, Vol. 14, No. 2 (Autumn, 1983), pp. 301-314
Stable URL: <http://links.jstor.org/sici?sici=0361-915X%28198323%2914%3A2%3C301%3AASOCST%3E2.0.CO%3B2-4>
- * Green, Edward J., and Robert Porter. Noncooperative Collusion under Imperfect Price Information. *Econometrica*, 1984, vol. 52, p.87-100.
- * Rotemberg, Julio J., and Garth Saloner. A Supergame-Theoretic Model of Price Wars during Booms. *The American Economic Review*, Vol. 76, No. 3 (Jun., 1986), pp. 390-407.
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198606%2976%3A3%3C390%3AASMOPW%3E2.0.CO%3B2-B>
- * Slade, Margaret E. Strategic pricing models and interpretation of price-war data. *European Economic Review*, 1990, v.31 p.524-537.
Stable URL: http://www.sciencedirect.com/science?_ob=ArticleURL&_aset=V-WA-A-W-A-MsSWYWW-UUA-U-AAWZYZBYUB-AAWVVVVZUB-WYYUBWZWD-A-U&_rdoc=1&_fmt=full&_udi=B6V64-45GSCBT-41&_coverDate=05%2F31%2F1990&_cdi=5804&_orig=search&_st=13&_sort=d

<http://www.jstor.org/stable/2124005&acq=55c29b7354411a5368ba0460354dae6c>

- Ellison, Glenn. Theories of Cartel Stability and the Joint Executive Committee. *The RAND Journal of Economics*, Vol. 25, No. 1 (Spring, 1994), pp. 37-57
Stable URL: <http://links.jstor.org/sici?sici=0741-6261%28199421%2925%3A1%3C37%3ATOCSAT%3E2.0.CO%3B2-D>
- Sherer and Ross, 1990, Ch. 7-8.
- [Shy], ch.6
- Levenstein, Margaret C. Price Wars and the Stability of Collusion: A Study of the Pre-World War I Bromine Industry. *The Journal of Industrial Economics*, Vol. 45, No. 2 (Jun., 1997), pp. 117-137.
Stable URL: <http://links.jstor.org/sici?sici=0022-1821%28199706%2945%3A2%3C117%3APWATSO%3E2.0.CO%3B2-N>
- Slade, Margaret E. Interfirm Rivalry in a Repeated Game: An Empirical Test of Tacit Collusion. *The Journal of Industrial Economics*, Vol. 35, No. 4, The Empirical Renaissance in Industrial Economics (Jun., 1987), pp. 499-516
Stable URL: <http://links.jstor.org/sici?sici=0022-1821%28198706%2935%3A4%3C499%3AIRIARG%3E2.0.CO%3B2-I>
- Slade, Margaret E. Vancouver's Gasoline Price Wars: An Empirical Exercise in Uncovering Supergame Strategies. *Review of Economic Studies*, 1987, vol.59, no.2, p.257-276.
Stable URL: <http://links.jstor.org/sici?sici=0034-6527%28199204%2959%3A2%3C257%3AVGWAE%3E2.0.CO%3B2-9>

7. *Econometric methods for applied work with application to price collusion*

- * Breshnahan, Timothy. The Oligopolistic Solution Concept is Identified. *Economic Letters* (1982), 87-92.
- * Nevo, Aviv. Identification of the Oligopoly Solution Concept in a Differentiated Products Industry. *Economic Letters*, 59:3 (1998)
- Bresnahan, Timothy. Empirical Studies of Industries with Market Power, in [HB], Vol. 2.
- Verbeek, Martin. A guide of modern econometrics. OUP, 1999.

8. *Entry deterrence and entry accommodation*

- * [Tir], ch.8
- * [SG], ch.5
- * Fudenberg, Drew, and Jean Tirole. The Fat-Cat Effect, the Puppy-Dog Ploy, and the Lean and Hungry Look. *The American Economic Review*, Vol. 74, No. 2, Papers and Proceedings of the Ninety-Sixth Annual Meeting of the American Economic Association (May, 1984), pp. 361-366
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198405%2974%3A2%3C361%3ATFETPP%3E2.0.CO%3B2-S>
- * Dixit, Avinash. The Role of Investment in Entry-Deterrence. *The Economic Journal*, Vol. 90, No. 357 (Mar., 1980), pp. 95-106
Stable URL: <http://links.jstor.org/sici?sici=0013-0133%28198003%2990%3A357%3C95%3ATROIIE%3E2.0.CO%3B2-D>
- [CP], ch.10
- Bulow, Jeremy I.; John D. Geanakoplos; Paul D. Klemperer
Multimarket Oligopoly: Strategic Substitutes and Complements.
The Journal of Political Economy, Vol. 93, No. 3 (Jun., 1985), pp. 488-511

Stable URL: <http://links.jstor.org/sici?sici=0022-3808%28198506%2993%3A3%3C488%3AMOSSAC%3E2.0.CO%3B2-D>

- Lieberman, Marvin B. Excess Capacity as a Barrier to Entry: An Empirical Appraisal. *The Journal of Industrial Economics*, Vol. 35, No. 4, The Empirical Renaissance in Industrial Economics (Jun., 1987), pp. 607-627

Stable URL: <http://links.jstor.org/sici?sici=0022-1821%28198706%2935%3A4%3C607%3AECAABT%3E2.0.CO%3B2-5>

9. *Product differentiation*

* [Tir], ch.7

* [SG], ch.6

- * Shaked, Avner, and John Sutton. Relaxing Price Competition Through Product Differentiation. *The Review of Economic Studies*, Vol. 49, No. 1 (Jan., 1982), pp. 3-13

Stable URL: <http://links.jstor.org/sici?sici=0034-6527%28198201%2949%3A1%3C3%3ARPCTPD%3E2.0.CO%3B2-D>

- [Shy], ch.7

- [CP], ch.8

- Salop, Steven C. Monopolistic Competition with Outside Goods. *The Bell Journal of Economics*, Vol. 10, No. 1 (Spring, 1979), pp. 141-156

Stable URL: <http://links.jstor.org/sici?sici=0361-915X%28197921%2910%3A1%3C141%3AMCWOG%3E2.0.CO%3B2-M>

- D'Aspremont, Claude, J.J.Gabszewicz, Jean-Francois Thisse. On Hotelling's 'Stability in competition'. *Econometrica*, v.47, 1979, p.1145-1150. Stable URL:

Stable URL: <http://links.jstor.org/sici?sici=0012-9682%28197909%2947%3A5%3C1145%3AOH%22IC%3E2.0.CO%3B2-I>

- Perloff, Jeffrey M, and Steven C. Salop. Equilibrium with Product Differentiation. *The Review of Economic Studies*, Vol. 52, No. 1 (Jan., 1985), pp. 107-120

Stable URL: <http://links.jstor.org/sici?sici=0034-6527%28198501%2952%3A1%3C107%3AEWPD%3E2.0.CO%3B2-K>

- Judd, Kenneth L. Credible Spatial Preemption. *The RAND Journal of Economics*, Vol. 16, No. 2 (Summer, 1985), pp. 153-166

Stable URL: <http://links.jstor.org/sici?sici=0741-6261%28198522%2916%3A2%3C153%3ACSP%3E2.0.CO%3B2-D>

- Shaked, Avner, and John Sutton. Product Differentiation and Industrial Structure. *The Journal of Industrial Economics*, Vol. 36, No. 2 (Dec., 1987), pp. 131-146

Stable URL: <http://links.jstor.org/sici?sici=0022-1821%28198712%2936%3A2%3C131%3APDAIS%3E2.0.CO%3B2-G>

10. *Advertising*

* [CP]

* [Shy]

- * Gabaix, Xavier, and David Laibson. Consumer Myopia, Shrouded Attributes, and Information Suppression in Competitive Markets. *Quarterly Journal of Economics*, 121 (2), May 2006, p. 505-540. http://econ-www.mit.edu/faculty/download_pdf.php?id=527

- Bagwell K. The economics analysis of advertising. Mimeo, Columbia University, 2005. <http://www.columbia.edu/%7Ekwb8/adchapterPost082605.pdf>

- Lancaster, Kelvin. The Economics of product variety: a survey. *Marketing Science*, 1990, vol.9, no.3, p.189-203. Stable URL:

<http://links.jstor.org/sici?sici=0732-2399%28199022%299%3A3%3C189%3ATEOPVA%3E2.0.CO%3B2-C>

- Eaton, B.Curtis and Richard G.Lipsey. Product differentiation. In: [HB], ch.12
- Klemperer, Paul. Markets with Consumer Switching Costs. *Quarterly Journal of Economics*, 102 (1987), 375-394.
Stable URL: <http://links.jstor.org/sici?sici=0033-5533%28198705%29102%3A2%3C375%3AMWCSC%3E2.0.CO%3B2-X>

11. Monopoly and price discrimination

- * [SG], ch.7
- * [CP], ch.11-12
- * [Tir], ch.3
- * [Mar], ch.15
- Sherer and Ross, ch.13
- Oi, Walter Y. A Disneyland Dilemma: Two-Part Tariffs for a Mickey Mouse Monopoly. *The Quarterly Journal of Economics*, Vol. 85, No. 1 (Feb., 1971), pp. 77-96.
Stable URL: <http://links.jstor.org/sici?sici=0033-5533%28197102%2985%3A1%3C77%3AADDTTF%3E2.0.CO%3B2-3>
- Varian, Hal R. Price Discrimination and Social Welfare. *The American Economic Review*, Vol. 75, No. 4 (Sep., 1985), pp. 870-875
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198509%2975%3A4%3C870%3APDASW%3E2.0.CO%3B2-8>
- Verboven, Frank. International Price Discrimination in the European Car Market. *The RAND Journal of Economics*, Vol. 27, No. 2 (Summer, 1996), pp. 240-268
Stable URL: <http://links.jstor.org/sici?sici=0741-6261%28199622%2927%3A2%3C240%3AIPDITE%3E2.0.CO%3B2-9>
- Graddy, Kathryn. Testing for imperfect price competition at the Fulton fish market. *The RAND Journal of Economics*, 1995, Vol.26, no.1, p.75-92.
Stable URL: <http://links.jstor.org/sici?sici=0741-6261%28199521%2926%3A1%3C75%3ATFICAT%3E2.0.CO%3B2-V>

12. Vertical integration and vertical restraints

- * [Tir], ch.4
- * [SG], ch.8
- * [Mar], ch.17
- * Mathewson, G.Frank, and Ralph A. Winter. An Economic Theory of Vertical Restraints. *The RAND Journal of Economics*, Vol. 15, No. 1 (Spring, 1984), pp. 27-38.
Stable URL: <http://links.jstor.org/sici?sici=0741-6261%28198421%2915%3A1%3C27%3AAETOV%3E2.0.CO%3B2-C>
- * Mathewson, G.Frank, and Ralph A. Winter. On Vertical Restraints and the Law: A Reply. *The RAND Journal of Economics*, Vol. 19, No. 2 (Summer, 1988), pp. 298-301.
Stable URL: <http://links.jstor.org/sici?sici=0741-6261%28198822%2919%3A2%3C298%3AOVRATL%3E2.0.CO%3B2-L>
- * Mathewson, G.Frank, and Ralph A. Winter. The Competitive Effects of Vertical Agreements: Comment. *The American Economic Review*, Vol. 77, No. 5 (Dec., 1987), pp. 1057-1062.
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198712%2977%3A5%3C1057%3ATCEOVA%3E2.0.CO%3B2-2>
- [CP], ch.13
- Sherer and Ross, ch.15

- Katz, M.L. Vertical contractual relations. In: [HB], ch.11
- Antitrust Cases: Monopolies and Mergers Commission (MMC) New Motor Cars, Cm 1808 (London: H. M. S. O., 1992).
- Rey, Patrick, and Joseph E. Stiglitz. The Role of Exclusive Territories in Producers' Competition. *The RAND Journal of Economics*, Vol. 26, No. 3 (Autumn, 1995), pp. 431-451.
Stable URL: <http://links.jstor.org/sici?sici=0741-6261%28199523%2926%3A3%3C431%3ATROETI%3E2.0.CO%3B2-I>

13. The determinants of market structure

- * Bain, Joe S. Economies of Scale, Concentration, and the Condition of Entry in Twenty Manufacturing Industries. *The American Economic Review*, Vol. 44, No. 1 (Mar., 1954), pp. 15-39
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28195403%2944%3A1%3C15%3AEOSCAT%3E2.0.CO%3B2-M>
- * Sutton, John. Sunk cost and market structure. MIT Press, 1991
- * Sutton, John. Game-theoretic models of market structure. In: Kreps D.M. and Wallis K.F., eds. *Advances in economics and econometrics. The VIIIth world congress. v.1*, CUP, 1997
- * Sutton, John. Technology and market structure. *European Economic Review*, 1996, v.40, p.511-530.
Stable URL: http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6V64-3VW8NC3-B-1&_cdi=5804&_user=2124005&_orig=search&_coverDate=04%2F30%2F1996&_sk=999599996&_view=c&_wchp=dGLbVtb-zSkWb&md5=7cffcd4c995139afb35b77a1d383ff52&ie=/sdarticle.pdf
- * [SG], ch.9
- [Mar], ch.8
- Sherer and Ross, ch.3-4

14. Competition and industrial policy

- * [Mar], various chapters.
- * [SG], ch.10
- [CP], ch.17, 20
- Sherer and Ross, ch.3-4.

15. Regulation and natural monopolies

- * Armstrong, Mark, Simon Cowan and John Vickers. *Regulatory Reform: economic analysis and British experience*. MIT Press, 1994.
- * [SG], ch.11
- Laffont J.J. and Tirole J. *Theory of incentives for procurement and regulation*. MIT Press, 1999.
- Winston, Clifford. US industry adjustment to economic deregulation. *Journal of Economic Perspectives*, 1998, v.12, no.3, p.89-110.
Stable URL: <http://links.jstor.org/sici?sici=0895-3309%28199822%2912%3A3%3C89%3AUIATED%3E2.0.CO%3B2-H>
- Christensen, Laurtis R., and William H, Greene. Economies of scale in US electric power generation. *Journal of Political Economy*, 1973, v.84, no.4, p.655-676.
Stable URL: <http://links.jstor.org/sici?sici=0022-3808%28197608%2984%3A4%3C655%3AEOSIUE%3E2.0.CO%3B2-S>

- Evans, David S. and James J.Heckman. A test for subadditivity of the cost function with an application to the Bell system. American Economic Review, 1984, vol.74, p.615-623.
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198409%2974%3A4%3C615%3AATFSOT%3E2.0.CO%3B2-R> and
Stable URL: <http://links.jstor.org/sici?sici=0002-8282%28198609%2976%3A4%3C856%3AATFSOT%3E2.0.CO%3B2-4>
(erratum)

Time allocation/Distribution of hours

Topic	Contact hours:		Homework
	Lectures	Seminars	
Modules 1,2			
1. Introduction to Industrial Organisation	2	2	10
2. Noncooperative games for applied analysis	4	4	10
3. Size and structure of the firm	4	6	16
4. Agency theory, ownership and control	2	2	10
5. Static price competition in oligopoly models	4	4	10
6. Dynamic price competition	6	6	16
7. Entry deterrence and entry accommodation	4	4	10
Modules 3,4			
8. Econometric methods for applied work with application to price collusion	2	2	10
9. Product differentiation	8	8	18
10. Advertising	4	4	10
11. Monopoly and price discrimination	6	6	16
12. Vertical integration and vertical restraints	4	4	10
13. The determinants of market structure	6	6	18
14. Competition and industrial policy	2	2	10
15. Regulation and natural monopolies	8	6	18
Total	66	66	192