



THE UNIVERSITY OF TEXAS AT AUSTIN

## **EC 328: INDUSTRIAL ORGANIZATION (33430)**

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**Lectures:** Mondays, Wednesdays, and Fridays, from 11:00 to 12:00 in BRB 2.136.

**Office Hours:** Wednesdays from 9:00 to 11:00 in BRB 2.126.

**T.A.:** Yizao Liu. Office Hours: Tuesdays, 15:30 to 17:00 in BRB 2.116 ([yizaoliu@gmail.com](mailto:yizaoliu@gmail.com)).

**Description:** Industrial Organization deals with the way markets are configured, how many firms exist, how they relate to each other, and how this interaction has an effect on production, pricing, investment, advertising, and other decisions. We are not going to study how firms are internally organized and how do they coordinate human resources, materials, and technological knowledge to produce efficiently. These problems fall within the area of management. Industrial Organization is more concerned about interactions among firms and how do they affect the market outcome.

We will review the polar cases of market configuration: perfect competition, the one where producers do not have any market power and monopoly, when a single producer has the maximum market power possible. And then we will move to the more realistic configuration: oligopoly. Here a small number of firms produce either a single or differentiated products and compete with each other for a common final customer. We will not simply cover different models of firm behavior but provide elements to compare them in terms of efficiency and thus to serve as the basis for the antitrust policies.

This is an advanced undergraduate course in industrial organization. The course includes a substantial workload and lectures will make use of analytical methods to cover models rather than verbal descriptions. Formal rigor is expected from students. We will study the behavior of firms and the structure of markets. The first goal is to apply microeconomic theory to understand when and how firms exercise market power and its impact on market efficiency and consumer welfare. The second goal is to apply the theoretical insights to anti-trust cases.

The tools that we are going to cover in this course should help us understanding the role of price discounts, bundling, advertising, entry deterrence, and product differentiation, as well as to how do they serve to the business purposes of firms and how do they affect consumer welfare. Thus, we will be able to understand the logic behind some common business practices as well as the reasons for regulation of some industries and the economic impact of particular public policies (restrictions on advertising or mergers for instance).

Finally, the course will be conducted at a rigorous level of formalization. However, do not panic, the goal of the course is not to test your mathematical abilities although we will make use of math to formalize economic arguments. My goal is that you develop an understanding of the economic reasons behind firms' strategies and that this rationale becomes second nature to you. As you will have covered consumption and production in your Micro Theory course we will start studying market configurations almost immediately.

### **Textbooks:**

Industrial Organization: Contemporary Theory and Practise, Lynne Pepall, Daniel Richards, and George Norman, Thomson, 4<sup>th</sup> Edition, 2008.

The Antitrust Casebook: Milestones in Economic Regulation, William Breit and Kenneth Elzinga, Dryden Press, 3<sup>rd</sup> Edition, 1996.

"Lectures Notes for an Undergraduate Course in Market Structure and Regulation", Ken Hendricks and Asher Wolinsky.

### **Additional texts:**

Industrial Organizaition: A Strategic Approach, Jeffrey Church and Roger Ware, McGraw-Hill, 2001

The Antitrust Revolution, by J. Kwoka and L. White, Oxford University Press, 5<sup>th</sup> Edition, 2008.

### **Teaching Approach:**

I will make presentations of every topic. I will provide lecture notes, which will be generally posted prior to each topic. The textbook by Pepall, Richards and Norman covers most of the material in more detail. Please check BLACKBOARD regularly. I will post all the course materials there.

In three cases, in order to motivate a topic, we will start by discussing a HBS case. You should read the case in advance and try to solve the questions so that we have a lively discussion in class when I present it. There are also case studies (and a couple of empirical academic studies) that are used at the end of some topics to illustrate how the models can and have been applied in real life. The case studies are drawn primarily from the casebook by William Breit and Kenneth Elzinga and I encourage you to read these short chapters ahead of the class discussions.

All exams will carry the same weight towards the final grade although only the three highest scored will be considered to compute the final grade. All exams, including the final will carry the same weight towards the final grade. Exams are NOT cumulative: material covered in one of them will not be covered in the others (although as it should be obvious to you, they do not constitute separate bodies of knowledge). Exams are closed book and consulting books or notes will not be permitted. There will be no make-up dates. If you miss one exam due to a documented illness or medical emergency, your final grade will be computed out of the other exams that you did complete. If you fail to provide with the medical justification you will not be credited for the missed exam. Suggested solutions will be posted in BLACKBOARD immediately after the exams.

**Homeworks:** There are nine homeworks for grade. I plan to distribute these assignments on Wednesdays. This is the tentative schedule (subject to change):

1. Distributed on 9/1, due on 9/8.
2. Distributed on 9/8, due on 9/15.
3. Distributed on 9/15, due on 9/29.
4. Distributed on 9/29, due on 10/6.
5. Distributed on 10/6, due on 10/13.
6. Distributed on 10/13, due on 10/20.
7. Distributed on 10/27, due on 11/10.
8. Distributed on 11/10, due on 11/17.
9. Distributed on 11/17, due on 11/24.

**Exams:** There will be an in-class midterm and a final. The exact date of the midterm will be announced on Friday of the previous week at the latest. The final, according to the University webpage, is scheduled for Wednesday, December 8 at 9:00am.

**Grading:** Assessment will be based on class quizzes and participation (15%), assignments (25%), a midterm (20%), and a comprehensive final exam (40%).

**Course Homepage:** I make use of BLACKBOARD. I encourage you to visit the course homepage. I will communicate with you regularly using BLACKBOARD. I will also post case suggested solutions, my lectures (after being delivered but without figures), exam solutions, as well as additional material in the course homepage.

**Outline of the Course:** The main topics covered in this course are the following (approximately one per week although not always):

1. Review (Chapters 2, 4).

- HBS: Lille Tissages.
- Review of cost concepts, profit maximization, welfare measurement
- Antitrust Statutes: Sherman Act, Clayton Act, FTC Act.

2. Monopoly (Chapter 5)

- Theory/Regulation
- Durable good
- Applications: U.S. vs Alcoa (1945), U.S. vs United Shoe Machinery, U.S. vs E.I. duPont de Nemours & Co.

3. Price Discrimination (Chapter 5, 6, 8)

- First, second, and third degree price discrimination
- Two part tariffs
- Bundling and tie-in sales
- Applications: Utah Pie Co. vs Continental Baking Co. (1967), FTC vs Morton Salt (1948), Eastman Kodak vs Image Technical Services.

4. Oligopoly in Homogenous Good Markets (Chapters 9, 10a)

- HBS: Beauregard.
- Capacity competition: the Cournot model
- Price-markups, measures of market concentration.
- Price competition: the Bertrand model.
- Application: Genesove, D. and W. Mullin, "Testing Static Oligopoly Models: Conduct and Cost in the Sugar Industry, 1890-1914," RAND Journal, 1998.

5. Oligopoly in Differentiated Good Markets (Chapter 10b)

- Differentiated products
- Location models
- Application: HBS: "Breakfast Cereal Case"

6. Cartels and Price Fixing (Chapter 11, 14, 15)

- Dynamic games
- Creating and enforcing cartels
- Cooperation and repeated play
- Applications: U.S. vs Addyston Pipe and Steel Co., Interstate Circuit, Inc. vs U.S. (1939), E.I. duPont and Ethyl Corporation v FTC (1984).

MIDTERM

## 7. Horizontal Mergers (Chapter 16)

- Theory
- Merger guidelines for horizontal mergers
- Application: Standard Oil of New Jersey vs U.S., FTC vs Coca-Cola Bottling Company.

## 8. Vertical Mergers and Restraints (Chapters 17, 18, 19)

- Theory
- Application: Brown Shoe vs U.S; Ford Motor Co. vs U.S.; U.S. vs Colgate (1919), Continental TV vs GTE Sylvania.

## 9. Entry (Chapter 12, 13)

- Limit pricing
- Predatory pricing
- Raising rival's costs
- Application: Northeastern Telephone Co. vs AT&T (1981); Matsushita Electric vs. Zenith Radio Corp (1986).

## 10. Advertising (Chapter 20, 21)

- Theories of advertising
- Advertising and competition
- Application: Akerberg, D. "Empirically Distinguishing Informative and Prestige Effects of Advertising" RAND Journal of Economics, 32 (2), 316-333.

## 11. Innovation, Research and Development (Chapters 22, 23)

- Patents
- Joint ventures
- Application: OCS leasing

## 12. Auctions (Chapter 25) – Only if there is time left.

- First price and second price auctions: revenue equivalence.
- Common value auctions and the "winner's curse"
- Application: Hendricks, K. and R. Porter (1988), "An Empirical Study of an Auction with Asymmetric Information", American Economic Review, December 1988, 865-83.