

# Industrial Organization

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**Class:** 130 Biological  
Sciences

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**Term:** Spring 2000

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**Time:** Mon./Wed. 3:55-5:10

Mon./Wed. 2:30-

**Hours:** 3:30, Tue. 6:30-7:30,  
& after class

## Content

Students in a principles of economics course are taught the competitive model of market structure. It is simple and clear. However, it fails to explain the composition and behavior of most industries. In industrial organization, we will depart from this simple model. We will seek to explain why industries are composed of a few large firms rather than many small ones. We will analyze the strategies of firms and consumers and consider how regulators might intervene.

## Instructor

Please feel free to call me "David."

One of my favorite things about being a student of economics is the opportunity to analyze interesting problems with bright colleagues. Teaching industrial organization to advanced economics students provides yet another opportunity to do so. I find that Duke students who are close to completing economics degrees have a strong foundation of understanding and a genuine inquisitiveness regarding new material.

I hope that you will take advantage of electronic mail and my office hours. After class is also a great time to catch me. I truly enjoy staying after class to talk to those hardy souls who can tolerate economics for more than seventy-five minutes.

It seems that each semester I gain a better understanding of economics and how to teach it. I've learned much from my former students and I welcome your input as well. If you would prefer to provide anonymous feedback, you can do so using a service that Arts and Science provides at [www.aas.duke.edu/teach/tools/email.cgi](http://www.aas.duke.edu/teach/tools/email.cgi).

## Teaching Assistant

Peggy Brickman is the teaching assistant for Industrial Organization. She was an outstanding student in the class when I taught it two years ago. Peggy may be a bit "rusty," but she tells me that she is looking forward to refreshing her memory and working with the students in the class. I hope that you will take advantage of the opportunity to work with her.

## Readings

### Required

- Shy, Oz. *Industrial Organization: Theory and Applications*. Cambridge, Massachusetts: The MIT Press, 1995.

### Optional

- *The Wall Street Journal*
- *The Economist*
- Gibbons, Robert. "An Introduction to Applicable Game Theory." *Journal of Economic Perspectives*, Winter 1997, 11, 127-137.

A subscription to *The Wall Street Journal* will be useful, as it is an excellent source of ideas for puzzles. *The Economist* is another excellent source, but it is rather expensive. The reading from Gibbons will be of interest for those who want to read more about game theory than what is provided in the Shy textbook.

## Problem-Based Learning

In my first year as a graduate student at Duke University, I took an advanced microeconomics course from Daniel Graham. He introduced me to problem-based learning. This approach was first used in the Medical School at McMaster University in Hamilton, Canada. As a student, I found this approach to be an excellent way to learn. I hope that you will too.

In this class, you will be faced with new problems. The solutions will not come from regurgitating memorized textbook definitions or from restating material from lecture notes. You will need to relax and recognize that you have the skills required to reach a solution. You will receive much practice and grow in confidence as the semester progresses. It is my hope that you will apply these skills on your exams and, more importantly, in your future careers.

I think that Dan aptly summarizes the motivation for problem-based learning in his syllabus. "(Y)ou can no more learn to solve problems by listening to lectures about

problem solving than you can learn to hit a tennis ball by listening to lectures about tennis. Ability and confidence in problem solving can only come from active participation in problem solving and from the knowledge that you have successfully solved many similar problems in the past."

## **Class Format**

You will be assigned homework problems before most classes. If you have solved a problem and are willing to present it to the class, then you should notify me (on-line) no later than one hour before class. In previous semesters, the average student volunteered for approximately 75 percent of the problems.

Points are awarded for your willingness to present a problem, provided that you are able to do so successfully if called upon. I will randomly select (from the pool of volunteers) the presenters for that day.

If you are called upon to present a problem, you will be expected to explain the problem and answer questions asked by other students. It is perfectly acceptable to work with other students, but if you volunteer, then you should know how to solve the problem.

A student who volunteers for a problem without being prepared will be penalized by 20 points. This is the equivalent of 20 homework problems! Unfortunately, I have had to enforce this penalty on several occasions. Please do not sign up for problems that you are unable to present.

After the problems have been presented and discussed, I will discuss the topic for the next class. I will describe the topic's relevance and provide insight into how to approach the upcoming assignment.

## **Absences**

If you must be absent from class, but would like to receive credit for your work, please do the following:

1. Notify me in advance of the absence.
2. Sign-up online for the completed problems.
3. Submit the answers in writing before class. The answers may be given to me, placed in my mailbox, or given to a friend to be delivered.
4. Provide written documentation explaining your absence. Examples of documentation include an invitation to a job interview, an athletic schedule, etc.

It is important that you notify me in advance of your absence so that I do not call your name to present the solutions. A student who is called upon, but is absent, will have 20 points deducted from her grade.

## Puzzles

- A. **Create.** You will not only be asked to answer assigned problems; you will also be asked to pose interesting questions and then provide compelling explanations. Please submit an original problem as a new thread to the "Puzzle" discussion group. I recommend that you base your puzzle on an article that has appeared this year in *The Wall Street Journal*, *The Economist*, or another periodical that is readily accessible to other students.
- B. **Evaluate.** I will give you the names of 8 students whose puzzles you should grade. The criteria for puzzle grades is listed below in order of importance:
- **Rigor and Pertinence.** The student should not merely summarize the article, but model the problem and solution using analytical tools from the course.
  - **Originality.** The best problems are those that require creativity and are obviously motivated by recent news events. Students may use puzzles which do not come from recent issues of the *Wall Street Journal* or *The Economist*. However, it is easiest for the grader to verify that the problem has not been "borrowed" from another class if the topic comes from a current article to which the reader has access.
  - **Clarity.** The puzzle should be well-written and formatted handsomely.
  - **Succinctness.** This is not an essay. Extraneous information should be trimmed.

The grading scale is 1 (bad) to 5 (excellent). A student's grade will be obtained by deleting the lowest and highest scores and averaging the rest.

- C. **Feedback.** You will also be expected to post comments on the puzzles of any two of your classmates. These comments should be posted as replies rather than new threads.
- D. **Examples.** When I last taught the course, many of the puzzles were well-received. In particular, students seemed to like a puzzle written by Alan called "I Can Fly!" and one written by Jill called "Authorized Dealers".

## HTML

Text entered in the discussion groups will be interpreted as HTML. If you are unfamiliar with HTML may want to view the HTML Quick Reference Guide. Almost any web page can provide a helpful HTML example if the viewer clicks on "View" then "Document Source." This will reveal the HTML code used to create the page being viewed.

One common mistake that students make is hitting "enter" twice to separate paragraphs; type "<p>" instead. Another pitfall that you might encounter is that "<" is interpreted as html code; it is better to type "&lt;".

## Grade

- 30% Homework and Puzzle.
- 15% Exam 1.
- 15% Exam 2.
- 30% Final Exam.
- 10% "Wild Card." Your best exam grade will be given an added weight of 10 percent. For example, a student who performs particularly well on the final exam will have a final weighted at 40 percent.

## Schedule

Class	Topic	Assignment
1	Introduction	
2		Read syllabus, buy text, introductions on web
3	Production and Demand	3.1, 3.2, 3.3, 3.4
4		3.5, 3.6, 3.7, 3.8
5	Non-cooperative Game Theory	2.1, 2.2, 2.3, 2.4
6		2.5, 2.6, 2.7, 2.8
7	Perfect Competition	4.1, 4.2, 4.3, 4.4, 4.5, 4.6
8		4.7, 4.8, 4.9, 4.10
9	Monopoly	5.1, 5.2, 5.3, 5.4
10		5.5, 5.6, 5.7, 5.8
11	Exam 1	
12	Homogeneous Products	6.1, 6.2, 6.3, 6.4
13		6.5, 6.6, 6.7, 6.8
14	Differentiated Products	7.1, 7.2, 7.3, 7.4
15		7.5, 7.6, 7.7, 7.8
16	Concentration, Mergers, and Entry Barriers	8.1, 8.2, 8.3, 8.4
17		8.5, 8.6, 8.7, 8.8
18	Exam 2	
19	Quality, Durability, and Warranties	12.1, 12.2, 12.3, 12.4
20		12.5, 12.6, 12.7
21	Pricing Strategy	13.1, 13.2, 13.3, 13.4
22		13.5, 13.6, 13.7, puzzle
23	Marketing Strategy	14.1, 14.2, 14.3, 14.4
24		14.5, 14.6, 14.7, comment
25	Industry Examples	17.1, 17.2, 17.3
26	Final Exam	