This subject (previously called “Industrial Economics for Strategic Decisions”) is designed to provide a working knowledge of the analytical tools of economics that bear most directly on the strategic decisions that firms must make. The kinds of decisions that will be of interest to us include: setting prices and output levels; advertising; investments in new production capacity; the introduction of new products, brands, and quality variations; investments in R&D; and the use of patents. Throughout the course, our emphasis will be on market structure, its relationship with the way firms interact strategically, and its implications for market power. The analysis of market structure, strategic interactions among rival sellers, and strategies for entering an industry, or for deterring entry or controlling its impact, will be covered with a mix of theory and case material.

Students taking this course should have a good background in microeconomics — specifically, course 15.010 or its equivalent. In addition, some background in finance is strongly recommended.

No textbook will be assigned, but a set of readings is available on the Canvas course site. These readings include my lecture notes, along with various articles and book chapters. In addition, we will assign a number of HBS cases, which can be obtained via StudyNet. (A link to StudyNet is on the 15.013 Canvas site.) Also, from time to time we will post additional readings on Canvas.

You will need to find a teammate, with whom you will work on two aspects of the course: the Strategic Oligopoly Game and the written exercises. (Your teammate should be in the same section of 15.013.) Grading in the course will be based on four different aspects of your performance:

- **Class participation** (27% of grade) — All students are expected to have read the assigned materials, to attend class (virtually), and to participate actively in class discussions.

- **Strategic oligopoly game** (15% of grade) — You and your teammate will compete weekly against two other (anonymous) firms in this semester-long game. You will be graded on your performance as measured by your cumulative profits, relative to the overall performance of both sections of 15.013, *not* relative to the performance of your industry.

- **Exercises** (28% of grade) — We will assign 7 written “exercises” over the semester. You and your teammate will work on these exercises together. To receive credit, exercises must be submitted (electronically) on time.

- **Final exam** (30% of grade) — The exam will be during the last class. (Closed-book, but you can prepare and use an 8.5 x 11” sheet of paper with notes, formulas, etc. on both sides.)
Class Attendance and Participation: You are expected to attend (virtually) all classes, and to connect via Zoom promptly. You are also expected to have done the required reading and be prepared to participate actively in class discussion. I will begin most classes by calling on several students. **Make sure your video is on during the entire class.** If your video is off and we can’t see you, we will assume you are not present.

Computers and Phones: Given the importance of class participation, we ask that you use your computer **only to connect to the class via Zoom**, and not surf the web or read email during the class. We also expect you to **turn off your phones.** **As tempting as it might be to check your phone every 10 minutes, please turn it off and put it away during class.**

Group Work: **You are expected to participate fully in any exercise or other assignment that has your name on it. It is absolutely unacceptable to “rotate” assignments with your teammate, or take credit for an assignment in which you were not fully involved.**

Submission of Game Plays and Exercises: Your game play must be submitted before 5:00 pm on each day it is due. The game play and the exercises can be submitted using the links on Canvas.

**IMPORTANT DATES**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>Wednesday, Sept. 9</td>
<td>Please submit via the template on Canvas a short (1- or 2-paragraph) “biography” describing your background and interests. Include a photograph, and the phonetic spelling of your name.</td>
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<tr>
<td>Monday, Sept. 14</td>
<td>Trial play of the Strategic Oligopoly Game. Submit by 5:00 pm.</td>
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<tr>
<td>Monday, Sept. 21</td>
<td>Exercise 1 is due. Also, first real play of the Strategic Oligopoly Game (submit by 5:00 pm).</td>
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<tr>
<td>Monday, Sept. 28</td>
<td>NO CLASS, Yom Kippur. However, your play (Round 2) of the Strategic Oligopoly Game should be submitted by 5:00 pm.</td>
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<tr>
<td>Monday, Oct. 12</td>
<td>First real play of Strategic Oligopoly Game. (Submit by 5:00 pm.)</td>
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<tr>
<td>Tuesday, Oct. 13</td>
<td>MONDAY CLASS SCHEDULE.</td>
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<tr>
<td>Wednesday, Nov. 11</td>
<td>NO CLASS, Veterans Day.</td>
</tr>
<tr>
<td>Friday, Nov. 20</td>
<td>Final play of Strategic Oligopoly Game. Submit by 5:00 pm.</td>
</tr>
<tr>
<td>Nov. 23 to Nov. 28</td>
<td>NO CLASSES, Thanksgiving vacation.</td>
</tr>
<tr>
<td>Monday, Nov. 30</td>
<td>Wrap-up, review, game results.</td>
</tr>
<tr>
<td>Wednesday, Dec. 2</td>
<td>FINAL EXAM (90 minutes, during normal class time).</td>
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TENTATIVE OUTLINE

Sept 2  Wed  
Introduction: Sources and Uses of Market Power. Overview of the course. Market structure, market power and the value of the firm. Strategic decisions that affect market structure and market power. Competing in the market versus competing for the market.

Sept 7  Mon  
NO CLASS (Labor Day Holiday).

Sept 9  Wed  
Intertemporal Production Constraints, Pricing, and Market Power. How the dynamics of cost affects pricing and market power. Production and pricing with a learning curve. The learning curve in the Strategic Oligopoly Game. The production and pricing of depletable resources. Effects of uncertainty over future market conditions. The option value of oil reserves. Why are oil prices so volatile? Can we predict oil prices?

Read: R. Pindyck & D. Rubinfeld, Microeconomics, Section 15.8. Lecture Notes on Intertemporal Production and Pricing, Sections 1-5.

Turn in brief biography and photo via Canvas/Google form. Be prepared to answer questions on learning curve and oil well problem.

Sept 14  Mon  


Be prepared to answer questions on the beer industry. Hand in choice of game and exercise partner.

Trial play of Strategic Oligopoly Game is due by 5:00 pm

Sept 16  Wed  

Read: Notes on Internet Economics and Internet Music.

Read:  “Spotify.” [HBS Case #9-516-046]
Lecture Notes on Pricing, Section 2.

Exercise 1 due.
First real play of Strategic Oligopoly Game. Submit by 5:00 pm.


Read:  “WebMD (A).” [HBS Case #9-701-007]
“WebMD (B).” [HBS Case #9-701-133]
Readings on WebMD.

Sept 28  Mon  NO CLASS (Yom Kippur).

However, play of Strategic Oligopoly Game is due by 5:00 pm.


Read:  Lecture Notes on Vertical Structure, Sections 1, 3 and 4.
Pindyck & Rubinfeld, Microeconomics, Review Section 11.4.

Exercise 2 due.


Read:  Lecture Notes on Game Theory, Sections 1—6.
Oct 7 Wed The Value of Information and Strategic Timing of Investments. Competing with limited information. Does better information make a firm better off? Should you convey information to your competitors? Informational cascades and “wisdom after the fact.” Rational versus irrational bubbles. The timing of investment decisions. Learning from nature and learning from others: oil, real estate, R&D. Entry decisions in the pharmaceutical industry. Product-specific versus brand-specific network externalities, and the implications for R&D. First-mover versus second-mover advantage in pharmaceutical markets.


Exercise 3 due.

Oct 12 Mon NO CLASS – COLUMBUS DAY HOLIDAY

However, play of strategic oligopoly game is due by 5:00 pm.


Read: Lecture Notes on Entry and Reaction to Entry.


Read: Pindyck & Rubinfeld, Microeconomics, Examples 13.6 and 15.4. “Kao Corporation.” [HBS Case #9-591-012]

Exercise 4 due.


Read: Pindyck & Rubinfeld, Microeconomics, review Section 11.5. Lecture Notes on Bundling and Brand Proliferation, Sections 1-2. Lecture Notes on Pricing, Section 3.
Oct 21 Wed  Brand Proliferation. Discussion of attribute space and its use in economic analysis. Local competition among brands in attribute space. Choosing the attributes for new brands. Brand proliferation, entry deterrence, and market power. Analysis of the breakfast cereal industry.

Read: Lecture Notes on Bundling and Brand Proliferation (complete).


Read: “Boeing 787: Manufacturing a Dream.” [HBS Case #9-615-048]
Readings on Commercial Aircraft Industry.

Exercise 5 due.


Read: Lecture Notes on Network Externalities.
Lecture Notes on Pricing, Section 4.
“Philips’ Compact Disk Introduction (A).” [HBS Case #9-792-035]


“Fasten: Challenging Uber and Lyft with a New Business Model.” [HBS Case # 9-616-062]
Lecture Notes on Multi-Sided Platforms, Section 1.


*Exercise 6 due.*


Nov 11 Wed NO CLASS – VETERANS DAY HOLIDAY

Nov 16 Mon R&D, Patenting, and Licensing. Implications of R&D and innovation for industry evolution and market structure. When do patents protect innovations? The race to innovate. Making the R&D investment decision: strategic and non-strategic aspects. Patents as options. Discount rates for risky R&D investments. Sleeping patents and the decision to adopt a new innovation. Licensing decisions. The use of licensing to gain market power.

Read: Lecture Notes on R&D and Patent Licensing.

*Last play of Strategic Oligopoly Game.* Submit by 5:00 pm.


Read: Lecture Notes on R&D and Patent Licensing.


*Exercise 7 due.*
Nov 20  Fri  Last play of Strategic Oligopoly Game. Submit by 5:00 pm.

Nov 23 to 27  NO CLASSES – THANKSGIVING VACATION.

Nov 30  Mon  Wrap-up Class. Completion of material on R&D and patent licensing decisions. Results of Strategic Oligopoly Game – meet your competitors! Review for Final Exam.

Dec 2  Wed  FINAL EXAM. (Closed-book, but you can bring an 8.5 x 11” sheet of paper with notes, formulas, etc. on both sides.)