Econ 1460 - Industrial Organization
Brown University
Fall 2012

Lecture: TuTh 9:00-10:20am in Salomon Center 203
Conference: Th 11-11:50pm in Rock A9
              Th 6:00-6:50pm Wilson 109

Exam: Tuesday, December 18, 2-5pm in SmithB G01

Instructor: Itay Fainmesser (email: Itay_Fainmesser@Brown.edu)
Office: Robinson 303D
Office hours: Wednesday 12-1pm
                Thursday 10:30-11:30am

Teaching assistant: Michael Suher (email: Michael_Suher@Brown.edu)
Office hours: Tuesday 2-4pm in Maxcy 302

Course description
Industrial organization is the study of firm behavior and market outcomes under different forms of competition, with emphasis on oligopoly, where firms interact strategically. We apply optimization and game theoretic reasoning in order to explain pricing schemes, branding, merger activity and other features we observe in actual markets. From a social point of view, we are interested in when and why competition leads to inefficiencies, and how regulation can address them.

The first part of the course looks at the workhorse models of market structure: first the "extreme" settings of perfect competition and monopoly, then the intermediate oligopoly models (Bertrand and Cournot). The second part of the course considers how firms attempt to change the industry structure through consolidation (entry deterrence, mergers, tacit collusion). In the third part of the course we explore advanced topics such as network effects, intellectual property, and advertizing.

Prerequisites
ECON 1110 (Intermediate Microeconomics) or ECON 1130 (Intermediate Microeconomics, Mathematical), MATH 0090 or equivalent.

While not a prerequisite beyond ECON 1110, a strong background in Game Theory is a plus.

Readings
Textbook
Shy, O. (1996). *Industrial Organization: Theory and Applications.* MIT Press. ISBN: 978-0-262-69179-6

Reference
Cabral, L. (2000). *Introduction to Industrial Organization*. MIT Press. ISBN: 978-0262032865. (on library reserve)
Tirole, J. (1988). *The Theory of Industrial Organization*. MIT Press. ISBN: 978-0262200714. (on library reserve)

There are several other well-regarded books at a similar level to Shy's, e.g. Carlton and Perloff, *Modern Industrial Organization*, and Church and Ware, *Industrial Organization: A Strategic Approach* (out of print, but downloadable for free at: http://homepages.ucalgary.ca/~jrchurch/page4/page5/files/PostedIOSA.pdf).

Tirole is more detailed and rigorous, the standard book for graduate courses. Lectures may occasionally go beyond the level of Shy, and then you might wish to consult Tirole.

If you need a quick math refresher with solved examples, Schaum's *Introduction to Mathematical Economics* by Dowling is one place to start.

Problem Sets
Between 8 and 12 problem sets will be assigned throughout the semester. Problem sets will mostly consist of questions from the book. Problem sets must be handed in at the beginning of the Thursday class on the week they are due. Solutions to the weekly problem sets will be available in the conference. Therefore, no late submissions will be accepted.

Problem sets are designed as a learning experience. A great emphasis should be put on working through each problem.

Problem sets will be graded based on the amount of work that appears to have been invested in reaching a solution. A complete and correct solution that includes all of the steps in solving a problem will achieve the maximum score. A solution that includes most of the steps yet reaches a wrong conclusion, or a solution that includes coherent steps, even if wrong, will achieve many of the points. A correct solution which does not go through the necessary steps will not always achieve the maximal score.

Working carefully through problems in the problem sets is also a great practice for the exam (see the section regarding the exams for more information).

Failing to submit a problem set will be excused only in cases of a medical or family emergency, verified by a letter from Dean David Targan. Failing to submit a problem set without such a letter will entail a grade of 0 points in the problem set.

Additional Practice Problems
For extra practice, additional questions (and their solutions) are posted at:
https://sites.google.com/a/brown.edu/itay-fainmesser/teaching/econ-1460

The practice questions are divided into topics and include all of the material taught in class and more. It is a good idea to pick questions from topics that you find challenging for extra practice throughout the course and before exams (see the section regarding the exams for more information).

Exams

There will be three exams in the course: two in-class midterm exams and a final exam. An absence from an exam will be excused only in cases of a medical or family emergency, verified by a letter from Dean David Targan. Absence without such letter will entail a grade of 0 points in the exam.

At least one question in each exam will be a **modified** version of a problem assigned in problem sets prior to the exam. At least one question in the final exam will be a **modified** version of a question from the relevant parts of the additional practice problems mentioned above.

Grading

Your course grade will be based on problem sets, two midterm exams, a final exam, and class participation. Each assignment will receive a grade between 0 and 100. A student's grade in the class will be calculated according to the following guidelines:

Problem sets:	15%
Midterm exams:	40%
Final exam:	40%
Class participation:	5%

Corrected assignments will be available in the class mailbox (in the basement of Robinson hall) at most six days after the deadline or the date of the assignment. Students then have at most *eight* days to introduce a complaint regarding a grade (that means exactly two weeks after the deadline or the date of the test). Requests must be placed in my mailbox in Robinson hall (room 103). I expect them to be specific and motivated. This means that you must include a copy of the question(s) that need(s) to be considered for re-grading, a copy of the answer(s), and an explanation of why the question(s) need(s) to be considered for re-grading. If I find the request valid, then I will re-grade these question(s) myself (which may possibly result in a lower grade).

Laptops and cell phones policy

Laptops and cell phones should be turned off and put away during class and section.

Office Hours

Office hours are a great learning opportunity. Please come to my and the TA's office hours with questions on the material covered in class, and comments on the course. Please also come to my office hours if you want to talk about anything in Economics. Please do not use either my or the TA's office hours to talk about grades.

Schedule (tentative)

	Date	Topic	Reading	Problem set due
Week 1	*Th* 9/6	(1) Introduction to IO (2) Perfect competition	1.1, 4.1 – 4.3	
Week 2	*Tu* 9/11	Monopoly	5.1-5.3, 5.5	
	Th 9/13	Monopolistic Competition	6.1 – 6.4	Section 4.4 Q 1-6
Week 3	*Tu* 9/18	Monopolistic Competition		
	Th 9/20	Product Differentiation	7.1	Section 5.7 Q 1, 3, 6 Section 6.8 Q 1, 2, 3
Week 4	*Tu* 9/25	Product Differentiation	7.3.1, 7.3.3	
	Th 9/27	Mergers	8.1 - 8.2	Section 7.6 Q 1,3,4 *Midterm Q&A session in conference
Week 5	*Tu* 10/2	Mergers and Antitrust Law	8.6	
	Th 10/4	**First Midterm**		No Section
Week 6	*Tu* 10/9	Game Theory	2.1 - 2.3	
	Th 10/11	Game Theory, Entry Barriers	2.5, 8.3-8.4	
Week 7	*Tu* 10/16	Entry Deterrence		
	Th 10/18	Entry Deterrence		Section 2.6 Q 3, 5
Week 8	*Tu* 10/23	Contestable Markets and Antitrust	8.5, 8.7	
	Th 10/25	Collusion and Antitrust	6.5, 5.6.2	Section 8.8 Q 3, 4, and from additional problems on website page 21 question (c) Midterm Q&A in conference
Week 9	*Tu* 10/30	Class cancelled due to storm.		

	Th 11/1	**Second Midterm**		Solutions for midterm review in conference
Week 10	*Tu* 11/6	Network effects	10.1	
	Th 11/8	Network effects		Section 6.8 Q 4
Week 11	*Tu* 11/13	Two sided platforms	10.2	
	Th 11/15	R&D	9.2	Handout
Week 12	*Tu* 11/20	R&D	9.4-9.6	
	Th 11/22	No class – Thanksgiving		
Week 13	*Tu* 11/27	Advertising	11.1-11.2	Section 9.10 Q 4
	Th 11/29	Ad auctions	Slides on class website	
Week 14	*Tu* 12/4	Ad auctions		
	Th 12/6	TBD		Section 11.7 Q 1,2 Final exam Q&A session in conference
Reading Period				