

Economics 445
Industrial Organization
Fall 2019

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Class location & time: Sec 1: Tuesdays and Thursdays, 8:00 - 9:15. Gardner 309
 Sec 3: Tuesdays and Thursdays, 12:30 - 1:45. Woollen 301

Midterm Exams: Midterm 1: Tuesday September 24
 Midterm 2: Tuesday November 5

Final Exam: Sec 1: Thursday December 12, 8:00 AM
 Sec 3: Friday December 6, 12:00 PM

Office Hours: Mondays 9:30-11:30 and by appointment in Gardner 200C

Course goals and approach

We will study the causes and consequences of firms' strategic behavior, focusing on situations in which the assumptions behind perfect competition do not hold. Our main analytical tools will be microeconomic theory and game theory. We will supplement our theoretical work with empirical evidence from academic research and the popular press.

The topics we will study include: pricing, product design, imperfect competition, collusion and cartels, firm-to-firm supply relationships, and mergers. Within each topic we will consider the impact of firms' actions on consumer welfare. We will also consider the motivation for and impact of US antitrust law on these settings.

Economics is more a way of thinking rather than a collection of facts, and industrial organization (IO) is no exception. While some historical information is important to IO, our main objective is to develop your ability to use economic models to understand a broad range of problems. These models, when constructed well, can be both simple and powerful. Your ability to construct, analyze, and interpret models is best developed through practice, and our class meetings, assignments, and exams will focus on providing this practice.

I will require you to use basic calculus during this course. If you remember what a derivative is and how to obtain one, you will not have any problems with the math that we use here.

Readings

The official course textbook is *Introduction to Industrial Organization* (2nd edition) by Luis Cabral.

You are required to buy a textbook for this course. If you have low-cost access to a recent edition of *Industrial Organization: Contemporary Theory and Empirical Applications* by Pepall, Richards, and

Norman, you may opt to use this book instead of the official book. If you use an alternative text, however, it is your responsibility to locate relevant readings in your textbook.

I expect you to read ahead of our class discussions. I will make announcements in class or through email about the text sections you should be reading. If you are uncertain about what to read, please refer to the course outline in this syllabus.

We will supplement the textbook with readings and other materials (podcasts, videos). Our approach to these materials will be more casual than our treatment of the text. We will use them to reinforce the relevance of the (sometimes abstract) models we will encounter in class and in the text.

I encourage you to stay abreast of current economics-related events. Good popular press sources include the New York Times, the Wall Street Journal, and the Economist. There are also many online news sources and podcasts that are worth checking out.

I encourage you to read articles from across the spectrum of microeconomics. Even if articles do not explicitly mention Industrial Organization topics, they are likely to provide interesting opportunities to think about the economic forces common to IO and other microeconomics areas.

Grading

Your grade will be based on three exams and your homework assignments. The course grade is divided as follows:

Exam 1	20%
Exam 2	20%
Final	40%
Homework assignments	20%

Grades will be curved so that final course grades have a similar distribution to previous versions of this class. Participating in class discussions can add up to 5% to your (curved) grade.

Sakai

I will use Sakai to distribute notes, readings, homework assignments, etc. Please verify that you can log on to Sakai and access the information for this class.

All course grades will be stored and displayed on the Sakai course page. It is your responsibility to insure that the grades on this course page are accurate.

Exams

There will be two midterm exams and a final exam. An unexcused absence from an exam will result in a grade of zero for that exam. If you will miss an exam due to a university-approved absence, you must provide documentation for this approval as soon you are aware of the conflict and are able to provide the documentation. Valid reasons for missing an exam include: a documented personal

illness, a serious illness or emergency within your immediate family, or an authorized university activity. Personal travel, job interviews, and club activities are not approved absences.

Re-grade policy: For simple scoring or adding-up mistakes, return the exam to me with a brief explanation. For more substantial cases where you think that you deserve credit for an answer, write one or two paragraphs explaining why you think your answer is correct, and give it to me (along with your exam). You must provide all regrade requests within two weeks of when I return the graded exams.

Homework assignments

I will post assignments to Sakai one week before they are due. You are welcome to work with other students on the assignments, but everyone must turn in his or her own version of the homework. Your assignment must clearly reflect your own work and cannot contain verbatim passages from your classmates' assignments. Late work generally can be turned in within a week of the due date for half credit. I will provide brief answers to the assignments about one week after they are due.

Classroom etiquette

My goal is to maintain a classroom environment that provides a good learning environment for everyone. To minimize distractions, you must turn off all phones, laptops, and other electronic devices during class. I expect you to arrive on time and prepared for the day's class.

Academic integrity

You are encouraged to work together with other students on the homework. However, each student must write up his or her own version of the homework assignment. Exams are taken individually, without any help from other students or unapproved resources. Each student is expected to maintain academic integrity and follow the UNC Honor System.

Course Outline

LC = Luis Cabral textbook.

PRN = Pepall Richards and Norman textbook. I will post excerpts to Sakai.

The number in parentheses is the approximate number of class meetings we will spend on a topic. The class lectures and slides are a guide to what topics are important within in each LC chapter. You are not responsible for LC sections we do not discuss in class.

0. Course introduction, objectives, policy perspective (1). Readings: LC 1.
1. Consumers and firms (1). LC 2, 3.
2. Competition and monopoly (2). LC 4.1, 4.2, 4.4, 5.3-5.5.
3. Monopoly product and pricing strategies (5).
 - a. Price discrimination. LC 6.1-6.3, 6.4
 - b. Bundling. LC 6.2.
4. Game theory: Assumptions and solution concepts (3). LC 7.1-7.3.

Midterm 1 approximately here.

5. Oligopoly with homogeneous goods (5)
 - a. Bertrand competition. LC 8.1.
 - b. Cournot competition. LC 8.2 and 8.3.
 - c. Stackelberg competition. PRN 11.1-3.
6. Equilibrium market structure (1). Class notes and LC 10.
7. Oligopoly with differentiated products (1). Class notes and LC 14.1-2.

Midterm 2 approximately here.

8. Cartels and collusion (2). LC 9.
9. Horizontal mergers (2). LC 11.
10. Vertical relationships (3)
 - a. Mergers. LC 13.1.
 - b. Price and non-price restrictions. LC 13.2.

Final exam