

**Economics 445**  
**Industrial Organization**  
**Fall 2016**

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Office Hours:                      Tuesday 11-12, Wed. 1:30-2:30 and by appointment

**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, 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 text for the course is *Industrial Organization: Contemporary Theory and Empirical Applications* by Pepall, Richards, and Norman. You may purchase the 5<sup>th</sup> edition, which is available at the UNC bookstore, or you may buy the 3<sup>rd</sup> or 4<sup>th</sup> edition. I will discuss text readings in terms of the chapter and section headings as they appear in the 5<sup>th</sup> edition. If you buy an earlier edition, it should be relatively straightforward to locate readings in your textbook. While some section headings/numbering differ across editions, each edition contains all of the topics we will cover in this course.

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 collected from the popular press (newspapers, magazines, etc.). Our approach to these readings will be more casual than our treatment of the text. We will use the readings to reinforce the relevance of the (sometimes abstract) models we will encounter in class and in the text. The readings will be posted on Sakai in advance of our discussion.

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 several stimulating economics-oriented blogs that are worth reading.

I also 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.

## **Exams and Grading**

There will be two midterm exams and a final exam. The exam questions will involve problem solving rather than memorization. Your main task is to develop a strong understanding of economic models and good intuition about economics rather than memorizing terms or formulas.

Your grade will be based on three exams and your homework assignments.

Exam 1: Sept. 29	25%
Exam 2: Nov. 10	25%
Final: December 13, 8:00 AM	35%
Homework assignments	15%

The two exams given during the semester will include the material covered in the previous week and the earlier class periods. The exams will not include the material covered on the Tuesday before the exam so that you have an opportunity to review the material and ask questions before the exam. The second exam will not explicitly test the material covered before the first exam but we will be using some of these concepts throughout the course.

There will be no make-up exams. If you miss an exam, the final exam will be reweighted accordingly. Also, if you do substantially better on the final exam than on the earlier exams, the relative weight on the final exam may be increased.

*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 a paragraph 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. The importance of doing homework and practice problems cannot be over emphasized. Most students are unable to understand the material well by only reading the text and reviewing class notes. Late work can be turned in within a week of the due date for half credit with possibly some tighter deadlines near exams. I will provide brief answers to the assignments one week after they are due. I will try to respond to emails within 24 hours. If the question are complex, they may be more suitable for discussion and we can cover them in class.

**Prerequisites:**

Basic Calculus

Statistics and Econometrics (Econ. 400 or equivalent)

Intermediate Microeconomics (Econ. 410 or equivalent)

**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.

**Sakai**

I will use Sakai to distribute slides, readings, homework assignments, etc. The slides for each class will be posted at least 24 hours in advance. 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.

**Academic integrity**

You are welcome to work with other students on the homework 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. 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

PRN = Pepall, Richards, and Norman. The class lectures and slides are a guide to what topics are important within in each PRN chapter. You are not responsible for PRN sections we do not discuss in class.

0. Course introduction, objectives,
1. Review of demand, costs, perfect competition and monopoly PRN 2 & 4.
2. Monopoly product and pricing strategies
  - a. Price discrimination. PRN 5-6.
  - b. Bundling. PRN 8.
3. Game theory: Assumptions and solution concepts PRN 9.1-9.3.
4. Oligopoly markets
  - a. Cournot competition. PRN 9.4-9.6
  - b. Bertrand competition. PRN 10.1-10.2.
  - c. Spatial markets. PRN 10.3.
  - d. Describing market structure; historical perspective. PRN 1 &3
5. Oligopoly markets, extensions
  - a. Stackelberg competition. PRN 11.1
  - b. Dynamic interaction. PRN 11.2-11.3
  - c. Entry deterrence. PRN 12.
6. Cartels and collusion PRN 14.
7. Horizontal mergers PRN 15.
8. Vertical relationships (as time permits)
  - a. Mergers. PRN 16.1-16.5
  - b. Price restrictions. PRN 17.
  - c. Non-price restrictions PRN 18