# Economics 445 Section 1

## Industrial Organization

## June 18, 2013

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| **Instructor** | Matthew Horne |
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| **Office Hours** | Philips Annex 104, Wednesday 1:00 PM - 3:00 PM |

**Where**: Gardner Hall Room 0106, Monday through Friday 11:30 AM - 1:00 PM

**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. The main content of this course will be theoretical; however, at times we will try to discuss real markets to better understand our models.

The topics we will study include: pricing, product design, imperfect competition, collusion and cartels, mergers, network effects, and advertising. 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. Although 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, homework, and exams will focus on providing this practice.

As was the case in Econ 410, we will use some calculus in this course. However, like with Econ 410, only a basic understanding of calculus is necessary to succeed in Industrial Organization. I will try my best to avoid excessive math in this course, though at times extensive derivations will be necessary. In general, the math necessary to succeed in this course will be at the level of difficulty of, or slightly more challenging than what you used in Econ 410.

**Prerequisites**: Economics 410 is a formal prerequisite for this course. Therefore, I will assume familiarity with the basic concepts from that course, i.e., the consumer's problem, perfect competition, and basic game theory.

**Textbook**: *Contemporary Industrial Organization: A Quantitative Approach* ($1^{st}$ edition, Blackwell) by Pepall, Richards, and Norman. You may purchase this text at the university's bookstore, although you may find a copy elsewhere at a better price. The text is **not required**.

The text is intended to supplement what is taught in class, as well as provide practice problems. That said, you are responsible for what is covered in class, unless I say otherwise.

For those who are struggling with relating to the course content, I suggest referencing popular press outlets such as the New York Times, the Economist, and the Wall Street Journal. Although these references may aid students, they will not factor into the graded content of the course.

**Exams**: There will be two midterms and one final exam for this course. Tentatively, the midterms will be held on **Monday July $1^{st}$**, and **Friday July $12^{th}$**. Your final exam is scheduled on **Thursday July $25^{th}$ 11:30 AM to 2:30 PM**

If you miss an exam, I will redistribute its weight onto your remaining exams (i.e., if you miss the first midterm, then your second midterm will now count toward 30% of your grade, and your final will count for 50%). As such, no make-up exams will be offered if you miss a midterm, barring medical reason or an official excuse from the university. There will be no make-up offered for the final exam, barring medical reason or an official excuse.

**Homework and Participation**: I will assign a total of 3 homeworks, one for each test. Your homework will only be graded for completion; however, it will behoove you to seriously attempt them, since exam questions will be similar. I will not be posting solutions, but I will devote part of the lecture before an exam for review.

I **do not require attendance** in the sense that absence does not directly translate to a lower participation grade. However, a portion of your grade will come from participation, and only those who are actively engaged, either in class or office hours, will receive full credit.

**Grades**: The final exam will count for 40% of your grade, and together your midterms will count for 40% of your grade. Homework, in total, will count for 10% and participation will count for 10%. **Final grades will be curved at the end of the course**. However, I will provide a sketch of what the distribution looks like after each exam. Ideally, the median student can expect a B in the course, with the top 25%

receiving an A, the next 40% a B, the next 25% a C, and the bottom 10% anywhere from a C to an F. **But this curve needn't apply**; if all student perform exemplary, then the curve will be more generous. Conversely, overall poor performance warrants a steeper curve.

**Etiquette**: As mentioned, attendance is not mandatory, though I do require those who do attend to be respectful of myself and their classmates. By that I mean that **cellphones are prohibited**, and I request that those who would like to use a laptop or similar electronic devices during class sit in the back of the class so as not to distract their fellow classmates. If you cannot follow these rules, I will request that you leave the room.

### Course Content (Tentatively)

1. Introduction

   - Course introduction and historical perspectives (PRN Chapter 1)
   - Review of perfect competition and monopoly (2)
   - Production costs (3)

2. Monopoly pricing and strategies

   - Price Discrimination (5)
   - Bundling (6)
   - Multiproduct firms (6)
   - Spatial markets (6)

3. Game theory

   - Assumptions and solution concepts (7-8)

4. Oligopoly

   - Cournot competition (7.3)
   - Bertrand competition (7.4)
   - Spatial markets (7.4)

5. Oligopoly extensions

   - Stackelberg competition (8.1)
   - Dynamic competition (8.2-8.3)

- Entry deterrence (9)
- Cartels and collusion (10)

6. Horizontal merger (11)

7. Vertical relationships
  - Mergers (12)
  - Price restrictions (13)

8. Additional Topics (As Time Permits)
  - Advertising (14)
  - Innovation (15)
  - Networks (17)