ECON 432 A: Industrial Organization and Price Analysis
Winter 2022

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The course covers core topics in industrial organization, such as competition and market structure, product differentiation, entry and exit, cartel, and consumer dynamics. This course also discusses several empirical and numerical methods used in economics and then applies them to the analysis of recent antitrust issues. Specifically, we learn estimation of demand and supply, and computation of equilibrium of oligopolistic models. Then, we apply these methods to simulating mergers, which were recently proposed or already took place in the US and Europe. We evaluate the welfare impact of these mergers. To perform these analyses, we use STATA and MATLAB, but prior knowledge of these software is not required. For STATA, I will explain the basics in my second lecture. For MATLAB, I will send out some resources later.

Reading. There is **no required textbook** for this course. During the lectures, I will mainly use models and real-world examples from the following five textbooks:

1. Paul Belleflamme and Martin Peitz, *Industrial Organization: Markets and Strategies*, 2010, Cambridge University Press.
2. Jean Tirole, *The Theory of Industrial Organization*, 1988, The MIT Press.
3. Oz Shy, *Industrial Organization: Theory and Applications*, 1995, The MIT Press.
4. Peter Davis and Eliana Garces, *Quantitative Techniques for Competition and Antitrust Analysis*, 2009, Princeton University Press.
5. Luis Cabral, *Introduction to Industrial Organization*, 2000, The MIT Press.

You do **not** need to buy any of these textbooks. I will distribute class slides before every lecture. Additional readings for each topic are announced later.

**IMPORTANT NOTE
Lectures.** Lectures will be held Over zoom, Mondays and Wednesdays from 3:30p-5:20p. In terms of the lecture format, the first half of class will be via pre-recorded lecture recordings which you can access via canvas, and the second half of class will be Q&A and discussion sessions.

Prerequisite. Students are assumed to know intermediate microeconomic theory. I will review analytical tools such as calculus and basic game theory in the first lecture, and basic econometrics in the second lecture. For more specific/advanced concepts, I will cover them when needed.

Materials. For each lecture, class notes are posted by 10 am of the day of the lecture on the course website at https://sites.google.com/site/yuyasweb/teaching/. Homework assignments and notifications are also available there.

Exam and Grading. There will be two midterm exams, two problem sets (both analytical and empirical exercises) and one final exam. Each of these exams and problem sets accounts for 20% of the course grade. The exams will cover materials from problem sets, practice questions and lecture materials.

***IMPORTANT NOTE
The midterm exam time is 2 hours, and to accommodate for the time difference where some of you may be living abroad temporarily, you have the option to complete your exam any time within a 24-hour window from the start of the exam. The window will start at 8:30am on the day of the exam, and end at 8:30am on the following date. However, once you start the exam, you will have 2 hours to complete the exam (The clock will keep ticking even if you leave the exam midpoint).
Final exam: TBD remote or in person.

Deadline of each problem set.

Problem set 1: January 24 at 3:30pm
Problem set 2: February 14 at 3:30pm

Office Hours. By appointment.

Outline Schedule (subject to change)

Lecture 1 (Jan. 3)	Introduction and review of intermediate microeconomics (technology, cost, demand, etc) and game theory
Lecture 2 (Jan. 5)	Review of basic econometrics and STATA
Lecture 3 (Jan. 10)	Monopoly
Lecture 4 (Jan. 12)	Product differentiation (location models)
(Jan. 17)	Martin Luther King's Birthday
Lecture 5 (Jan. 19)	Estimation of differentiated product models 1 **(A material for Midterm 2)**
Lecture 6 (Jan. 24)	Estimation of differentiated product models 2 **(A material for Midterm 2)**
Lecture 7 (Jan. 26)	**Review session**
Lecture 8 (Jan. 31)	**Midterm 1**
Lecture 9 (Feb. 2)	Cartel and collusions
Lecture 10 (Feb. 7)	Estimation of entry model
Lecture 11 (Feb. 9)	Vertical restraints
Lecture 12 (Feb. 14)	Consumer Dynamics
Lecture 13 (Feb. 16)	**Review session**
Lecture 14 (Feb. 21)	**Midterm2**
(Feb. 23)	President's Day

Lecture 15 (Feb. 28)   Merger simulation I
Lecture 16 (Mar. 2)   Merger Simulation II
Lecture 17 (Mar. 7)   **Review session**
Lecture 18 (Mar. 9)   Self study session
Lecture 19 (Mar. 17)   **Final exam**