ECON 432 A: Empirical Industrial Organization
Winter 2025

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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 have already taken place in the US and Europe. We evaluate the welfare impact of these mergers. While we will be using STATA to perform some analysis, this is not a STATA focused course and prior knowledge of STATA is not required.

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 **in person**, on Mondays and Wednesdays from 11:30-1:20pm.

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.

Learning Objectives. At the end of this course, students will be able to use data to estimate a model and simulate a counterfactual scenario. That is, they will be able to run "policy simulation".

Materials. For each lecture, class notes are posted by 8 am of the day of the lecture on Canvas. 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.

Final exam: Cumulative; Date Mar. 19, 2025

Due date of each problem set.

Problem set 1: **January 27 at 11:30am**
Problem set 2: **February 19 at 11:30am**

Office Hours Mondays after class (1:30pm Savery Hall, Room 329); or by appointment.

Outline Schedule (subject to change)

Instruction begins on Jan. 6, 2025
Last day of instruction is Mar. 12, 2025

Lecture 1   (Jan. 6)   Introduction and review of intermediate microeconomics
                                   (technology, cost, demand, etc) and game theory
Lecture 2   (Jan. 8)   Review of basic econometrics and STATA
Lecture 3   (Jan. 13) Monopoly
Lecture 4   (Jan. 15) Estimation of differentiated product models
                  (Jan. 20) Mr. Luther King Jr. Day
Lecture 5   (Jan. 22) Estimation of firms' conduct
                  (Jan. 27) **Review session class**
                  (Jan. 29) **Midterm 1**
Lecture 6   (Feb. 3)   Cartel and collusions I
Lecture 7   (Feb. 5)   Cartel and collusions II
Lecture 8   (Feb. 10) Estimation of entry model
Lecture 9   (Feb. 12) Vertical restraints
                  (Feb. 17) Presidents' Day
                  (Feb. 19) **Review session class**
                  (Feb. 24) **Midterm2**
Lecture 10   (Feb. 26) Consumer dynamics
Lecture 11   (Mar. 3)   Merger (Concept)
Lecture 12   (Mar. 5)   Merger simulation I
Lecture 13   (Mar. 10) Merger simulation II
Lecture 14   (Mar. 12) **Review session class**

Final Exam (Mar. 19), 2:30-4:20 pm, ART 317