

ECON 432 A: Empirical Industrial Organization Spring 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. To perform these analyses, we use STATA, but prior knowledge of the software is not required: I will explain the basics in my second lecture.

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, on Tuesdays and Thursdays from 8:30-10:20am. 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. **Please log on to ZOOM at 9:30am for Q&A.**

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 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.

*****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: April 14 at 8:30am

Problem set 2: May 5 at 8:30am

Office Hours. By appointment.

Outline Schedule (subject to change)

- Lecture 1 (Mar. 29) Introduction and review of intermediate microeconomics (technology, cost, demand, etc) and game theory
- Lecture 2 (Mar. 31) Review of basic econometrics and STATA
- Lecture 3 (Apr. 5) Monopoly
- Lecture 4 (Apr. 7) Product differentiation (location models)
- Lecture 5 (Apr. 12) Estimation of differentiated product models I
- Lecture 6 (Apr. 14) Estimation of differentiated product models II
- Lecture 7 (Apr. 19) **Review session**
- Lecture 8 (Apr. 21) **Midterm 1**
- Lecture 9 (Apr. 26) Cartel and collusions
- Lecture 10 (Apr. 28) Estimation of entry model
- Lecture 11 (May 3) Vertical restraints
- Lecture 12 (May 5) Consumer Dynamics
- Lecture 13 (May 10) **Review session**
- Lecture 14 (May 12) **Midterm 2**
- Lecture 15 (May 17) Merger simulation I
- Lecture 16 (May 19) Merger simulation II
- Lecture 17 (May 24) **Review session**
- Lecture 18 (May 26) Self-study session
- Lecture 19 (Jun. 7) **Final exam**