

Fall 2023

Economics 4450: Industrial Organization

This is an advanced undergraduate course studying firm decision-making in contexts of imperfect competition; including pricing decisions, quality, entry and exit, mergers, collusion, and vertical relationships. The material will be a combination of economic models and applications to specific firms or industries. The goal is to provide a solid theoretical base to rigorously analyze firms and industries, discuss real-world applications of these formal models, and develop your analytical skills.

Instructors.

Professor: Juan Pablo Atal, ataljp@econ.upenn.edu

TAs: Daniel Jaar, djaar@sas.upenn.edu

- **Lecture:** Tuesday and Thursday 1:45-3:15pm
- **Office Hours:**
 - Professor Atal: Mondays 4 to 5.30pm, PCPSE 602
 - Daniel: Time and location TBA.

Important Dates.

- Midterm 1: 10/10 (in class).
- Midterm 2: 11/16 (in class).
- No class: 10/12 (Fall Break) and 11/24 (Thanksgiving)
- Presentations: 11/28, 11/30, 12/5, and 12/7 (in class).
- Final project due: 12/19 at 12 pm.

There will be no instructional material during the weeks of the presentations.

Assignments.

Submit all assignments on Canvas.

Problem Sets (in groups). There will be two problem sets. These assignments will enhance your understanding of the material and develop the problem-solving skills you need to succeed on the exams. The assignments should be done in groups of 3 or 4. Answers will typically be posted to Canvas the day the problem set is due. As a result, late problem sets will not be accepted.

- **Due:** 9/21 and 10/31 at 1:45pm

Exams. There will be two in-class midterms. There is no final exam.

- **Midterm 1:** Tuesday October 10
- **Midterm 2:** Thursday November 16

Final Project (in groups). A main requirement for the class is a case-study project, including a shorter proposal due mid-semester and a final paper due at the end of the semester. Students will present their projects during the last two weeks of class. Details on what is expected for this project are provided in a separate handout.

- Group and Firm Selection: by September 21
- Proposal: due October 19
- Presentations 11/28, 11/30, 12/5 and 12/7.
- Final Paper: due December 19 at 12pm

Participation. You will receive bonus credit for participation Ed Discussion if you provide (accurate) responses to your classmates' questions.

Grade Breakdown.

- Problem Sets: 20%.
- Midterms: 50% (25% each).
- Final project: 30%. (Presentation: 15%, Final Paper: 15%)

No extra credit assignments will be given.

Make-up midterm exams. There will be no make-up written exams. However, if you have one of the valid excuses listed in the Department's policy for missing the first midterm exam –and appropriately reported in the CAR system– the second exam will be re-weighted accordingly to maintain the 100% total. A make-up exam for students who miss the second midterm exam will be offered strictly following the Department's rules.

Regrading All re-grade requests for exams must be submitted in writing, with a full explanation of why you think the work was incorrectly graded. The deadline to submit the request will be announced when exams are returned. We will not accept re-grading any work written in pencil or that appears to have been altered. Except in cases where the grader has added numbers incorrectly, we will only re-grade entire exams. As a consequence, once you submit your work for re-grading, the grade can go either up or down.

Other Details.

Correspondence. We will use **Ed Discussion** to facilitate communication with your classmates. Post all content-related questions about problem sets, projects, and lectures on Ed Discussion. This is a great way to collaborate with classmates. Course instructors will monitor, and occasionally post, on the forum. Ed Discussion will also help instructors identify areas of difficulty or interest for students and hone lectures to focus on these areas. Ed Discussion is accessible through Canvas.

Use email for correspondence that is not appropriate for Ed Discussion. *Include Econ 4450 in the subject line.* You may expect me to respond to emails between 9 and 5 Monday through Friday, and within 48 hours of receiving it. I am happy to use email to respond to simple queries. Please see me during office hours for more involved discussions.

Email etiquette is important. This [nice post](#) from Professor Mark Tomforde provides very useful guidelines.

Text. There is no required textbook for the class. However, I will draw material mostly from:

- Church, Jeffrey and Roger Ware “Industrial Organization: A Strategic Approach”, 1st edition, 2000, McGraw-Hill (Freely available online)

Lectures are meant to be self-contained, but you might find it beneficial to consult the book when going over the material. I will provide the appropriate reference to the relevant chapter as we go along. Other textbooks I consulted to prepare the material are:

- Lynne Pepall, Dan Richards and George Norman, *Contemporary Industrial Organization: A Quantitative Approach*, 1st Edition.
- Luis Cabral, *Introduction to Industrial Organization*, 2nd Edition

There will be mandatory (as well as supplemental) readings for some lectures. These will be announced in advance.

Prerequisites Prerequisites: ECON 2100 (formerly 101). MATH 1400 (formerly 104) or 1070 and MATH 1410 (formerly 114) or 1510 (formerly 115) or 1080. ECON 2300 (formerly 103) is also recommended. Credit cannot be received for both ECON 0450 (formerly 035) and 4450. Wharton students can satisfy the ECON 2100 prerequisite with BEPP 2500 (formerly 250) HONORS. The regular BEPP 2500 course does not count as a substitute for ECON 2100.

Course Policies & Support. The [Economics Departmental Course Policies](#) outline rules about missed assignments, grading appeals, academic integrity, etc. You are responsible for familiarizing yourself with these policies.

If anything arises that impacts your ability to complete an assignment or participate in the course, please reach out to me. If you are feeling overwhelmed or having difficulty coping at any point, Penn has resources available to help you. For more information visit CAPS at (<https://caps.wellness.upenn.edu/>).

Students with disabilities In compliance with Penn policy and equal access laws, I am available to discuss appropriate academic accommodations that you may require as a student with a disability. Requests for academic accommodations need to be made during the first two weeks of the semester, except under unusual circumstances, to arrange reasonable accommodations. Students must register with Student Disabilities Services (SDS) for disability verification and for the determination of reasonable academic accommodations.

Outline of Topics.

Below is a brief overview of the main topics that we will cover in the course. A detailed schedule of the topic(s) covered each week and the corresponding readings will be posted in advance on Canvas.

1. **Monopoly:** Basics of monopoly pricing; Multiproduct monopoly; Price discrimination; Dynamic pricing.
2. **Oligopoly:** Competition models; Product differentiation; Measures of market product; Mergers; Collusion.
3. **Information:** Quality; Advertising; Reputation; Search (and switching) costs.
4. **Entry:** Determinants of entry; Entry deterrence; Predation.
5. **Vertical Relations:** Contracts along the vertical chain.