

Advanced Microeconomics for Policy Analysis II

PPHA 44200

Winter 2025

Prof. Zarek Brot (zarek@uchicago.edu)

Class Meetings:

Lecture: Mondays and Wednesdays, Keller 0007, 10:30am-11:50am

TA Discussion: Fridays, Keller 0023, 1:30pm-2:50pm

Office Hours: Time TBD, Keller 3011. To reserve a slot during regularly scheduled office hours, please use <https://calendly.com/zarek/office-hours-44200>. You do not *need* to reserve a slot (you can just walk in), but I will give priority to those students who do. In the scheduling system I ask you in advance what you would like to discuss. Letting me know means I will be more prepared to help you, so please fill that out in however much detail you can.

Teaching Assistants: Noah Liu (noahliuhx@uchicago.edu) and Yulia Rivera (yvaldiviarivera@uchicago.edu). Noah and Yulia's responsibilities will be to grade problem sets and exams, and run the discussion section. They will also hold walk-in office hours at Time TBD in Keller TBD. Please ask the two of them *only* about problem sets and lecture material. Any administrative issues should be sent to me alone.

Course Description

This course is the second course in the PhD microeconomics sequence. We will cover four topics: mechanism design, monopoly pricing, oligopolistic competition, and contract theory.

Prerequisites

You *must* have taken PPHA 44100 (Advanced Microeconomics for Policy Analysis I) and PPHA 41501 (Game Theory) to enroll in this course. You must also know the calculus-based approach to probability theory, covered in PPHA 42000 (Applied Econometrics I). This is a PhD-level course, required as a core course for PhD and MACRM students at Harris. If you have not taken both of these courses, you *must* have my permission to enroll in the course.

Assignments and Grading

Your final grade will be made up of three components: Problem sets (25%), midterm exam (35%), and final exam (40%).

There will be five problem sets. While you are welcome and encouraged to freely discuss the problems with your classmates, I expect each student to turn in their own individual assignment. Each problem set is due at 11:59pm on the due date. Problem sets will be submitted and graded via Gradescope.

Late Submissions. Every student has one 24-hour extension for assignments. Those extensions will be automatically applied to any late work, and require no excuse to be given. After a student has used their extension, for every six (6) hours beyond a deadline, you will lose 5% of your grade, receiving zero (0%) percent once 24 hours have passed. Each assignment will receive an equal weight. If you have an extenuating circumstance, please contact me before the deadline to work something out.

Regrade Requests. Regrade requests must be made within 7 days of when the student has received the graded assignment or exam back. You must submit regrade requests via Gradescope, and they *must* be accompanied by a written statement documenting the reason for the request.

Discussion Board

One additional tool that we will employ is a discussion board through Ed. We will use it for a few purposes. First, I ask that you please ask questions about problem sets or lecture concepts on Ed rather than via email. I and the TAs will review Ed regularly and answer questions. The point of this is that if you have a question, your peers are very likely to also have questions, and thus Ed will serve as a great repository of answers both for questions you as a student might have, as well as questions you don't yet know you have.

Additionally, I am not a pro theorist by trade, and so if I have difficulty answering a question mid-lecture, I will typically instruct you to submit the question on Ed so that I can give a more careful and correct answer than I may be able to come up with on the fly.

Textbooks

We will use two textbooks. The first is Mas-Colell, Whinston, and Green, *Microeconomic Theory* (denoted on the schedule below as MWG). The second is Tirole, *The Theory of Industrial Organization* (denoted as T).

As a supplement, you may also consider Hermalin, *Lecture Notes for Economics* (denoted as H), or Varian, *Microeconomic Analysis* (denoted as V). These cover similar material but I have chosen to follow the approach of the other textbooks. They may nonetheless be useful supplements, so I have included the relevant chapters on our schedule where appropriate.

Some of the lecture material is wholly original and does not have any associated readings; for this material, you can assume that the lecture slides cover the full set of relevant material.

Course Schedule

| Lecture | Day | Date | Topic(s) covered | Reading(s) | |
|-------------------------|---------------|--------|---|--|--------------------------------|
| | | | | Main | Supplemental |
| 1 | Monday | Jan 6 | Introduction; social choice | | MWG Ch. 21 |
| 2 | Wednesday | Jan 8 | Utilitarianism | | MWG Ch. 21 |
| Mechanism Design | | | | | |
| 3 | Monday | Jan 13 | Mechanisms; auctions | MWG Ch. 23 | Hayek (1945), H Ch. 11.1, 11.2 |
| 4 | Wednesday | Jan 15 | Vickrey-Clarke-Groves mechanisms; public goods | MWG Ch. 23 | |
| - | Monday | Jan 20 | MLK Day – No class | | |
| 5 | Wednesday | Jan 22 | Second-best mechanisms | - | |
| 6 | Friday | Jan 24 | Mechanism design with many agents | - | |
| Monopoly Pricing | | | | | |
| 7 | Monday | Jan 27 | Profit-maximizing auctions | MWG Ch. 23 | H Ch. 11.2 |
| 8 | Wednesday | Jan 29 | Monopoly linear pricing | T Ch. 1.1.1, 2.2.1 | H Ch. 2, v Ch. 14 |
| 9 | Monday | Feb 3 | Monopoly price discrimination I: 1st-degree, 3rd-degree | T Ch. 3.1, 3.2 | H Ch. 3 and 4, v Ch. 14 |
| 10 | Monday | Feb 10 | Monopoly price discrimination II: 2nd-degree | T Ch. 3.3 | H Ch. 5, v Ch. 14 |
| | Wednesday | Feb 5 | MIDTERM | | |
| Oligopoly | | | | | |
| 11 | Wednesday | Feb 12 | Oligopoly I: Bertrand and Cournot competition | T Ch. 5.1-5.4 | v Ch. 16 |
| 12 | Monday | Feb 17 | Oligopoly II: Bertrand competition with product differentiation | T Ch. 2.1 and 7.1 | Greenstone (2017) |
| Contract Theory | | | | | |
| 13 | Wednesday | Feb 19 | Adverse selection I: Unraveling and policy responses | MWG Ch. 13, Einav and Finkelstein (2011) | |
| 14 | Monday | Feb 24 | Adverse selection II: Signaling and screening | MWG Ch. 13 | Hendren (2014) |
| 15 | Wednesday | Feb 26 | Moral hazard I: Hidden action | MWG Ch. 14 | |
| 16 | Monday | Mar 3 | Moral hazard II: Hidden information | MWG Ch. 14 | |
| 17 | Wednesday | Mar 5 | Theory of the firm (time permitting) | | |