

Autumn 2025: PPHA 44100 Advanced Microeconomics for Public Policy I
TENTATIVE: SUBJECT TO CHANGE

Information about this course

Course description:

Abstract choice theory, choice under uncertainty, consumer theory, producer theory, elements of welfare economics and general equilibrium.

Prerequisites

Intermediate micro (at the level of, e.g., Varian's *Intermediate Microeconomics*) and multivariable calculus (including Lagrange multipliers, vectors and matrices, and implicit differentiation). Elementary real analysis will be helpful.

How this class will work

We will meet on Mondays and Wednesdays in Keller 0023 from 1:30pm to 2:50pm.

Our expectation is that you attend class in-person, barring short term absences. If you need to be temporarily absent from class due to an illness or other emergency, you should contact me directly about temporary arrangements.

Topics, readings, and schedule

I will not be following any one textbook very closely. The main reference is the lecture notes by Scott Ashworth. Other useful references are *Microeconomic Theory*, by Mas-Colell, Whinston, and Green; *Essential Microeconomics*, by John Riley; and *Microeconomic Foundations I: Choice and Competitive Markets*, by David Kreps.

Although it is not at all required for the course, I also recommend getting a copy of *Rational Choice*, by Itzhak Gilboa. This is a short, non-technical overview of all the topics covered in the PhD core. Read it right now and again at the end of the year, to aid your reflections on how everything fits together.

We have 18 course meetings. We will be following the notes in order. If all goes well, we should cover all seven chapters. An approximate schedule of topics and readings follows, with N referring to the lecture notes (page numbers may not be most up to date).

- 1. Models; Preferences (N pp. 4–9)
- 2. Choices and utility (N pp. 10–13)
- 3. Independence axiom, expected utility (N pp. 28–33)
- 4. Risk aversion, more-risk-averse relation (N pp. 35–39)
- 5. Portfolio problems; Stochastic dominance (N pp. 40–49)

- 6. The basic consumer problem (N pp. 52–55)
- 7. Constrained optimization and demand (N pp. 55–61)
- 8. Technology, profit maximization, returns to scale (N pp. 71–76)
- 9. Supporting hyperplanes; Aggregation and decentralization (N pp. 77–83)
- 10. Envelope theorem and Shepard’s lemma (N pp. 114–120)
- 11. Duality and compensated demand, Expenditure function, Slutsky equation (N pp. 127–134)
- 12. Equivalent and compensating variations; Application to deadweight loss of taxation (N pp. 135–137)
- 13. Normative Concepts for Policy Analysis (N pp. 92–96)
- 14. Characterization of Pareto optima (N pp. 97–100)
- 15. Walrasian equilibrium, Welfare theorems (N pp. 103–106)
- 16. The jungle economy
- 17. Foundations of cost-benefit analysis (N pp. 106–108)
- 18. Catch-up and review

Student assignments

The evaluation of the course contains 2 elements: problem sets (20%) and a final exam (80%).

The final exam will be centrally scheduled by the Harris School.

Problem sets will be due every week, before class starts on Monday. Late submissions will not be accepted. You can discuss the problems with other students, but you must write up your solutions to hand in independently.

Problem sets can be either handwritten or typed in LaTeX. No other electronic format is acceptable. Probably the easiest way to get started with LaTeX is the cloud application Overleaf. Once you sign up for an account through the university, you can configure Overleaf to sync with Dropbox or GitHub. Doing so is important—Overleaf server outages will not excuse late work.

Instructor Office Hours

Tue 2:00pm to 3:00pm, Keller 2051 or Zoom, by appointment:

<https://calendly.com/victorruan360/15min>

Please only reserve slots between 2pm and 3pm, and comment in your reservation “PPHA 44100”.

Teaching assistant

Pryce Davies

TA Sessions: Fri 10:30am to 11:50am, Keller 2112

Resources and Policies

- **Regrade Policy**

If you think there is any problem with the way your work has been graded, you must submit a regrade request within one week of the work being returned to you. The request must be in

writing and must be specific about what you believe is incorrect in the grading. Your grade may go up or go down as a result.

- **Electronics Policy**

No phones or laptops may be out during class. You may take notes on a tablet that is lying flat on the desk.

- **Generative AI Policy**

You may make limited use of generative AI on the problem sets in this course. Specifically, you might find an AI tool useful as a LaTeX assistant. That is allowed. But you may **not** use it to help answer homework questions.

In general, you need to be cautious about using AI tools in learning. Generative AI systems come with no guarantees that anything they say is correct, and in my experience, they are often wrong. In addition, they may reproduce exactly content from the sources they were trained on. And an overreliance on these tools will limit your accumulation of skills and understanding of the material.

- **General Resources Available to Students**

- [Harris Academic Support Programs and Handbook](#)
- [Student Wellness](#)
- [University Learning Resources](#)

- **Harris School and University of Chicago Policies**

- [Harris School Policies](#)
- [University General Policies](#)
- [University Academic Policies](#)
- Policies on audio and video [recordings](#) and [deletion](#).