

MICRO I: NEOCLASSICAL ECONOMICS (FALL 2025, II QUARTER)

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OBJECTIVE OF THE COURSE

This course is the first quarter of the PhD microeconomics sequence. It has a twofold objective.

First, it introduces the formal language of economic analysis, with a focus on learning how to define economic objects, state and prove results. Second, it presents a the fundamental decision theoretic models that are typically not covered in undergraduate or master's programs.

COURSE MATERIAL

Lecture notes/slides will be provided and you will be responsible only for the material contained here.

Although not strictly necessary, it improves one's understanding of the subject to read suggested chapters in

- A. Mas Colell, M. Whinston and J. Green (MWG) Microeconomic Theory, Oxford, 1995.
- D. Kreps, Microeconomic Foundations I: Choice and Competitive Markets, Princeton, 2013

GRADING

There will be two components to your final grade: a long problem set and a final exam, each contributing 50%.

- The long problem set will include exercises based on material covered in class but designed to take you further. These questions will require creativity and independent thinking. You are free to use any software tools you like, but you are not allowed to collaborate or discuss the problems with colleagues.
- Additionally, there will be several shorter, more conventional problem sets meant to help you study and consolidate the material. These will not be graded, but I will randomly select two exercises from them, along with one theory question (e.g., a proof of a theorem discussed in class), drawn from a list I will provide. These three questions, plus a “new” exercise will make up the final exam, which will take place in class, last three hours, and be closed book.

Important note: Attending lectures alone will not be sufficient to reach even a basic level of mastery in this course. I know this may sound discouraging, but this is the nature of a PhD course—I am only a small part of your learning process. You are expected to work hard outside of class: reviewing and redoing proofs presented in lectures, and most importantly working hard on the problem sets.

SYLLABUS

- Preference, Choice and Utility (Week 1, Exercise 1 of the Long PS)
 - Utility Representation iff WARP iff Rationality
 - Introduction to Behavioral models of decision making
- Demand Theory (Week 1 and 2, Exercises 2&3 of the Long PS)
 - Continuity and the Debreu's Theorem (full proof)
 - Marshallian Demand and Indirect Utility
 - Hicksian Demand and duality (Slutsky and Roy)
- The Theory of the Firm (Week 3, Exercise 4 of the Long PS)
 - Production sets
 - Profit and supply function
- Choice Under Uncertainty (Weeks 3, 4 and 5, Exercise 5 of the Long PS)
 - vNM Axioms and Expected Utility Theorem (full proof)
 - Expected Utility over Monetary Prizes and Risk Aversion
 - Subjective Expected Utility and the Savage model
 - Bird's eye view on other models of decision under uncertainty (AA, Choquet, max-min, temptation)