

USC ECON 601

Microeconomic Theory I

Fall 2022 Syllabus

Course Meeting Times: *Mon/Wed 2:00-3:50pm* in CPA 258

Instructors:

Asst. Prof. (teaching) Yilmaz Kocer (kocer@usc.edu)

Office hours: Tuesday 10.00–11.00am over zoom link [here](#) or by appointment.

Location: KAP 118

Prof. Nicolas Lambert (lambertn@usc.edu)

Office hours: Wed 4:00–5:00pm or by appointment

Location: KAP 360

Teaching Assistant:

Woo-Jin Kim (woojinki@usc.edu)

Office hours: Fri 11.00am–12.00pm

Location: to be announced

Course overview

This is a required course in microeconomic theory for first year economic PhD students. It provides key foundations that every economist should know. Its primary goal is to prepare you to understand the ideas that underlie the material you will learn through your careers as economists.

Prerequisites

As this is a required course for PhD students, our expectation is that you are qualified to take this course. Mathematical background is roughly at the level of an advanced course in real analysis, and linear algebra will be helpful as well. Some of you may need to pick up math as you go. If you have not seen probability, topology, etc., you will need to learn some of it. If you happen to be struggling with the math, please come see us. **Sundaram's** *A First Course in Optimization Theory* and **Simon & Blume's** *Math for Economists* jointly covers all analysis, topology, optimization theory you might need in this class.

For non-econ PhD students seeking to enroll: Any student not in our Econ PhD program can only enroll with an endorsement from a USC faculty member. This can be sent to us by email, and should explain briefly why they think you need to take the class and assert your preparedness. This is on top of a strong mathematical background and prior econ training. You should be aware that the bar is high.

Communication

All course materials; instructions, announcements, notes/handouts, corrections, discussion/feedback, exams, homeworks, answer keys, your grades... etc. will be posted on Blackboard.

Reading material

You should own the textbook *Microeconomic Theory* by Mas-Colell, Whinston and Green (**MWG**), *Lectures on Microeconomic Theory* (**R**) by Ariel Rubinstein and *Modeling Strategic Behavior* by Mailath (**M**). The last two books are freely available online. Notes/handouts will supplement our coverage in class.

Course outline

The course is divided into three parts. The tentative outline is as follows.

1. Individual Decision Making

- Utility, Preferences, Choices
- Consumer Choice and classical Demand Theory
- Lagrange Maximization and Duality
- Aggregation and the Representative Consumer, Producer Theory
- Expected Utility and Decision making under Uncertainty
- Monotone Comparative Statics

2. Game Theory

- Normal and extensive form games
- Complete and incomplete information
- Dominant strategies, rationalizability
- Nash, Bayes-Nash equilibrium, and refinements
- Models of information and knowledge
- Repeated games and Folk theorems
- Dynamic games
- Perfect Bayesian equilibrium, sequential equilibrium
- Applications to bargaining/signalling/cheap talk/reputation

3. Mechanism/Market Design

- Collective decision making
- Arrow's impossibility theorem
- Gibbard-Satterthwaite theorem
- Dominant strategy implementation
- The Revelation Principle
- The Vickrey-Clarke-Groves Mechanism
- Private value auctions, revenue maximization
- Matching theory

Grading

Your grade will be based on the following components:

- Class participation (**10%**).
- Problem sets (**30%**), given on a weekly basis. You may work in teams of up to 3 students, but you should hand in your own problem sets and write the names of your team partners on your copy.
- Exams (**60%**). There will be **3 exams**, one exam for each part of the course. The first two exams will be given as in-class midterms on **October 3rd** and **November 7th**, and the last exam will be given in class as a final on **December 9th Friday 2-4pm**. Each exam will be 90 minutes long and count for **20%** of your overall grade. All exams are closed books.

Acknowledgments

We are grateful to our predecessors and to Jeff Ely, Jon Levin, and Parag Pathak for sharing their class material. We take full responsibility for any errors.

Support Systems

Student Health Counseling Services - (213) 740-7711 – 24/7 on call engemannshc.usc.edu/counseling Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call suicidpreventionlifeline.org Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call engemannshc.usc.edu/rsvp Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086 equity.usc.edu, titleix.usc.edu Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

Bias Assessment Response and Support - (213) 740-2421 studentaffairs.usc.edu/bias-assessment-response-support A venue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Student Accessibility Services - (213) 740-0776 <https://osas.usc.edu/> Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710 studentaffairs.usc.edu/ssa Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student. **Diversity at USC** - (213) 740-2101 diversity.usc.edu Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call dps.usc.edu, emergency.usc.edu Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call dps.usc.edu Non-emergency assistance or information.