Economics 201A: Economic Theory (first half)

Tu-Th 12:30–2:00

60 Evans

1 Description

Economics 201A is the first semester of the required microeconomic theory sequence for first-year Ph.D. students in the economics department. The first half of the fall semester focuses on choice theory, consumer theory, producer theory, and expected utility theory. The second half will cover general equilibrium. (A separate syllabus will be distributed for the second half.) The last meeting of this half will be on Thursday October 12. The general equilibrium material begins on Tuesday October 17.

The theory sequence prepares students to conduct original research in economics. While qualified students from other departments are welcome, this course is not designed to teach microeconomic principles for application in other disciplines. Students are assumed to already understand microeconomics at an advanced undergraduate level.

2 Prerequisites and enrollment

The formal prerequisite for enrollment in 201A is a grade of B- or higher in Economics 204. A good grade in an advanced undergraduate course in real analysis, e.g. Mathematics 104, can be substituted for Economics 204 at the instructor's discretion. The requirement for real analysis courses outside of Berkeley is coverage of general metric spaces beyond Euclidean space. If you hope to use alternate coursework to satisfy the waiver, send an e-mail to me with your transcript and the syllabus from the course attached as PDF files. If you received a waiver from Professor Shannon, forward that email to me. There are no exceptions to the prerequisite. The enrollment is cross-verified with the prerequisites at several points in the semester. **Anyone enrolled in the course without the prerequisite, including anyone who received an unsatisfactory grade in 204, will receive an F grade for 201A regardless of course performance.**

Berkeley undergraduates who wish to enroll must have passed Mathematics 104 (Real Analysis), and have a professor in the economics department send me a short letter supporting their enrollment in 201A. **As a department policy, visiting students in the BESAP program are not allowed to enroll in 201A.**

If you are currently on the waitlist, the graduate advisor will verify your enrollment and you will be enrolled. If you are not on the wiatlist, please send me an email. I will pass your name to the graduate advisor who will provide you with a permission number to enroll. Processing enrollment usually takes at least two weeks.

All students must register to receive a letter grade in the class. The class cannot be audited or taken on a credit/no-credit basis. **Anyone registered on a credit/no-credit basis will**

receive a no-credit grade. Auditing 201A is officially prohibited.

3 Instructors and office hours

- David Ahn. Th 2:00–4:00 509 Evans; `dahn[at]econ.berkeley.edu`
- Cristian Ugarte. Tu 5:00–7:00 636 Evans; `cugarte[at]berkeley.edu`
- Dong Wei. M 6:00–7:00 and Th 6:00–7:00 630 Evans; `dongwei.2014[at]gmail.com`

Cristian will cover the F 2:00-4:00 and M 8:00-10:00 sections; Dong will cover the Th 4:00-6:00 and M 2:00-4:00 sections. Students may attend any of the four sections.

If you plan on visiting my office hours, please send me an e-mail the day before. While students who give prior notice have priority, you are of course welcome to stop by office hours. I am also happy to answer short questions over e-mail. For basic questions regarding the course material (e.g., help with understanding a step of a proof, questions about the solution of a problem, a review of Taylor expansion or other mathematical basics) please consult one of the GSI's.

4 Grading

The grade for the first half of the course is determined by an out-of-class midterm on the evening of **Monday October 16**. The numerical grades from the first and second halves are weighted equally. The final grade is an average of z-scores, $(X_i - E[X])/Std[X]$, for each half, where X_i is student i's score, $E[X]$ is the mean score, and $Std[X]$ is the standard deviation. **There is no adjustment for improvement.** The median grade is typically a B+. In principle, everyone can pass. Usually at least two students receive a C, and five to seven receive a grade of B– or worse.

The midterm is closed book and closed note, but any definition or result required to finish a problem will be provided. Students requiring special accommodations for the midterm should immediately notify me. Midterm scores will only be reconsidered for clerical or accounting errors, e.g., a miscalculation of the total.

Weekly problem sets will be assigned. Each problem set reviews material from prior lectures and previews upcoming material for future lectures. Problem sets are due at the beginning of class; late problem sets will not be accepted. After two problem sets are collected, a coin will be flipped to decide which of the two is graded. While problem set grades are not an explicit component of the grade, the problem sets provide the best way to learn the material and to prepare for the midterm. In cases where the midterm grade is on the border between two letter grades, problem set grades will be used to determine the final letter grade.

All students are accountable to the Academic Honor Code. Students should discuss problems collaboratively, but produce independent final solutions. Anyone caught cheating on an exam will receive a failing grade in the course and reported to the University Center for Student Conduct.

No electronic devices, including cell phones, computers, and tablets, may be used during lectures. These devices distract other students. Using an electronic device in class will result in a one-point deduction from the midterm exam grade.

Looking forward, the final exam for the course covering the general equilibrium material in the second half will be during the final exam period assigned by the Registrar on Thursday December 14 3:00-6:00.

5 Website

The course website is hosted on the Berkeley bCourses system:

https://bcourses.berkeley.edu/courses/1465048

Course notes, problem sets, solutions, and class announcements will be posted there. The website is not publicly available. If you are not yet enrolled, please contact one of the GSI's with your email address so you can be added to the participant list and access the website.

6 Course materials and textbooks

The course material will mainly draw from the course notes. The notes almost certainly contain errors and typos, please bring these to my attention as you notice them. **You are expected to have read the relevant course notes, at a desk with paper and pencil, *before* each class.** You are especially urged to attempt the exercises as you read the notes. Since this prior reading will be assumed, the lectures will be essentially incomprehensible to anyone who has not done the required reading beforehand.

No books are required, but the following books are recommended:

- D. M. Kreps, *Notes on the Theory of Choice*, Westview Press, 1988
- A. Mas-Colell, M. D. Whinston, and J. Green, *Microeconomic Theory*, Oxford University Press, 1995
- A. Rubinstein, *Lecture Notes in Microeconomic Theory*, Princeton University Press, 2016

The course structure most closely follows Professor Ariel Rubinstein's book, which is also available freely online at his website with registration.

7 Outline for first half

1. Preference, choice, and utility [4 lectures]

   Kreps §2–3; MWG §1,2.F,3.B,3.C; Rubinstein §1–3

Preference relations, Choice rules, Rationalizable choice, Revealed preference, Houthakker's Axiom, Sen's α and β, Application: consumer choice, Utility functions, Continuity of preference, Debreu's Theorem, Structural properties of utility, Quasi-linear utility

2. Consumer behavior and demand [4 lectures]

   MWG §2–4; Rubinstein §4–6

   Walrasian demand, Berge's Theorem, Continuity of demand, Implicit Function Theorem, Differentiability of demand, Smooth comparative statics, Monotone comparative statics, Hicksian demand, Duality, Slutsky matrix, Generalized Axiom of Revealed Preference, Afriat's Theorem

3. Production and supply [2 lectures]

   MWG §5; Rubinstein §7

   Production sets, Properties of supply, Aggregate and centralized supply, Separating Hyperplane Theorem, First and Second Welfare Theorems of supply

4. Choice under uncertainty [4 lectures]

   Kreps §4–9,14; MWG §6; Rubinstein §8,9)

   Independence, Archimedean axiom, Mixture Space Theorem, von Neumann–Morgenstern Expected Utility Theorem, Application: Becker–DeGroot–Marschak mechanisms and preference reversals, State-Independence, Monotonicity, Subjective probability, Anscombe–Aumann Expected Utility Theorem, Absolute and comparative risk aversion, Arrow–Pratt measure of risk aversion

8 Frequently asked questions

Q: *I received a C+ in Economics 204. I really understood the material and my course performance does not accurately reflect my understanding. I can do well in Economics 201A. Can I enroll in the course?*
A: No. You have not satisfied the prerequisite. Consider taking Mathematics 104 this year and enrolling in Economics 201A next academic year.

Q: *Can I enroll in the course if I concurrently take Mathematics 104 this semester?*
A: No. The prerequisite must be satisfied **before** the course begins.

Q: *Is Economics 201A a prerequisite for Economics 201B?*
A: Yes. Any student who is not enrolled in 201A cannot take 201B.

Q: *My grade in the second half was much better than my grade in the first half. Can the second half be weighted more heavily in my case to reflect my improvement over the semester?*
A: No. Both halves are weighted equally.

Q: *My program requires a B grade to continue my studies, and I received a B–. Is there any way to change the grade to a B?*
A: No. Any concern regarding how your grade impacts your progress is between you and your graduate program. The economics department cannot adjust grading standards to accommodate other programs.