

API 109
Advanced Microeconomic Analysis I
Harvard University • Fall 2021

Instructor: A. Arda Gitmez <agitmez@hks.harvard.edu>
Office: Littauer 104
Office Hours: Wednesdays 15.00–16.00, or by appointment
Faculty Assistant: Sarah Melendez <sarah_melendez@hks.harvard.edu>

TF: Matthew T. Dodier <mdodier@g.harvard.edu>
TF Section: Fridays 1.30–2.45 in R306 and 3–4.15 in R306
TF Office Hours: Thursdays 16.00–17.00 in R-302
CA1: James Bien
CA1 Office Hours: Fridays 14.00–15.00 in T-202
CA2: Keshav Choudhary
CA2 Office Hours: Thursdays 12.00–13.00 in L-G-21A (Library Study Space)
CA3: Matias Munoz Arredondo
CA3 Office Hours: Thursdays 9.00–10.00 in L-330 Herzog

Please include “API 109” in the subject line of all course-related e-mails.

Class Meetings: Mondays & Wednesdays 10.30–11.45 in L140
Website: <<https://canvas.harvard.edu/courses/93610>>

Overview

API 109 is the first semester of the two-semester sequence in advanced microeconomics for MPA/ID students. The goal of the course is to prepare students to analyze applied problems in international development using the tools of modern microeconomic theory. The course is a graduate-level course in microeconomic theory with an eye toward policy applications in development economics.

Audience

This course is intended for first-year MPA/ID students. Students not in the MPA/ID program will be admitted only with the permission of the instructor and only under exceptional circumstances. Students interested in a similar advanced microeconomics course should consider API 111 / Econ 2020a / HBS 4010 instead.

Prerequisites

The main prerequisite for this course is an understanding of multivariate calculus. Familiarity with linear algebra, probability theory, and mathematical optimization is also helpful. The most important prerequisite, however, is a degree of “mathematical sophistication” and comfort with rigorous reasoning and arguments.

Requirements and Grading

The course requirements include the completion of several problem sets, a midterm exam, and a final exam. Your grades on these tasks will be weighted according to either Scheme A or Scheme B.

	Scheme A	Scheme B
Problem Sets	20 %	20 %
Midterm Exam	30 %	20 %
Final Exam	50 %	60 %

Your final score will be computed according to the most favorable (for you) of the two weightings. Letter grades will be assigned based on your final weighted score. The distribution of course grades will correspond roughly to the Harvard Kennedy School's recommended grade distribution.

Exams

Both the midterm and final exam will be open book. You will be free to consult any materials you want but you are not allowed to communicate with anyone. The dates and times are below.

The midterm exam will cover material from the lectures starting (and including) September 1 until (and including) October 6.

The final exam will cover material from the entire semester. Roughly two-thirds of the points will be for the post-midterm material.

Problem Sets

Problem sets are graded primarily for completion and only a “check+/check/check–/no credit” will be offered for feedback. Earning a “check–” or better gives you full credit for the problem set. Sloppy, half-hearted, or incomplete work is unlikely to receive credit. Each problem set carries equal weight in the grades.

You are allowed (even encouraged) to work in small groups (four or fewer students) on the problem sets, but you must hand in independently written-up solutions. If you choose to collaborate with others, please identify other group members on your write-up. The problem sets are meant to be commitment devices to stay on top of the material and it will be very difficult to do well on the exams unless you can independently complete problem-set-like questions.

Solutions to the problem sets must be uploaded to the course website on Canvas prior to 8:30am on the due date. You can either upload pdfs of typed solutions or pictures of handwritten solutions.

Review Sections

The teaching fellow will hold weekly review sections. There will be two different sections, where identical material is covered so you can pick the more convenient time for you. Formally, attendance at these sections is optional. However, most students will benefit greatly from attending one weekly review section.

Course Materials

The material for the course will be contained in two primary sources: my slides and the textbook. Slides will be uploaded and shared. They will contain a comparatively accessible version of the material compared to the more advanced textbook.

The textbook for the class will be

- *Microeconomic Theory* [MWG] by Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green.

MWG is the standard textbook used in economics Ph.D. programs.

I will also assign supplementary readings for lectures and all this material will be made available.

Advice

1. Exam questions will resemble problem set questions. Please seek out practice problems wherever you can. Look beyond the assigned problem sets! Many textbooks have extra exercises. The internet is another resource. The teaching fellow, course assistants, and I are more than happy to help you solve/learn relevant material that you encounter independently.
2. Read the assigned readings before lecture and again after lecture.
3. Please feel welcome to ask questions in class. Illuminating digressions are exciting. However, I may defer your question to a later date or to office hours if it will get us too far off track.
4. Please make use of office hours. Even if you have no specific questions about the course material, please feel welcome to visit, chat, ask questions, or simply say hello.

Important Dates

Exams are scheduled for the following dates:

- Midterm Exam: 10.30–11.45, October 13, 2021.
- Final Exam: 09.00–12.00, December 13, 2021.

Problem sets are due on the following dates:

Problem Set	Time Due	Date Due
1	08:30	September 13
2	08:30	September 20
3	08:30	September 27
4	08:30	October 4
5	08:30	November 1
6	08:30	November 15
7	08:30	November 29

There is a regular lecture scheduled on Friday, September 3, 2021. It will be held at the regular class time and location.

There are no lectures on the following dates:

- Monday, September 6, 2021 (Labor Day)
- Monday, October 11, 2021 (Columbus Day)
- Wednesday, November 24, 2020 (Thanksgiving Recess)

Course Calendar

The calendar will be adjusted depending on our progress. There are two types of readings. Required readings you should attempt before class and review after class. Optional readings may be assigned to facilitate discussion or to illustrate applications. Additional readings may be added based on class interest.

The syllabus will be updated with assigned reading closer to the start of semester.

Key: • = required reading. ◊ = optional/supplemental/recommended reading.

September 1

Lecture 0. Introduction.

- ◊ Varian, Hal R. 1989. What Use is Economic Theory? Mimeo.
<<https://people.ischool.berkeley.edu/~hal/Papers/theory.pdf>>
- ◊ Epstein, Joshua M. 2008. Why Model? Mimeo.
<<https://www.cs.unm.edu/~joel/cs4all/WhyModel.pdf>>
- ◊ Roth, Alvin E. 2003. The Economist as Engineer: Game Theory, Experimentation, and Computation as Tools for Design Economics. *Econometrica* 70 (4): 1341–1378.
- ◊ Duflo, Esther. 2017. The Economist as a Plumber. *American Economic Review* 107 (5): 1–26.
- ◊ Banerjee, Abhijit V., and Esther Duflo. 2007. The Economic Lives of the Poor. *Journal of Economic Perspectives* 21(1):141–168.
- ◊ Hendren, Nathaniel, and Ben Sprung-Keyser. 2020. A Unified Welfare Analysis of Government Policies. *Quarterly Journal of Economics* 135(3):1209–1318.

September 3

Lecture 1. Preferences and Utility.

- MWG 1.A–1.B.
- ◊ Malmandier, Ulrike, and Stefan Nagel. 2011. Depression Babies: Do Macroeconomic Experiences Affect Risk Taking? *Quarterly Journal of Economics* 126(1):373–416.
- ◊ Alesina, Alberto, and Nicola Fuchs-Schündeln. 2007. Good-bye Lenin (or Not?): The Effect of Communism on People’s Preferences. *American Economic Review* 97(4):1507–1528.

September 8

Lecture 2. Revealed Preferences.

- ◊ Afriat, S. N. 1967. The Construction of Utility Functions from Expenditure Data. *International Economic Review* 8(1):67–77.
- ◊ Andreoni and Miller 2002. Giving According to GARP: An Experimental Test of the Consistency of Preferences for Altruism. *Econometrica* 70(2):737–753.

September 13

Lecture 3. Utility Maximization.

- MWG 3.D.

September 15

Lecture 4. Expenditure Minimization.

- MWG 3.E, 3.G.

September 20

Lecture 5. Putting Consumer Theory to Work: Applications.

- MWG 3.H.
- ◇ Jensen, Robert T., and Nolan H. Miller. 2008. Giffen Behavior and Subsistence Consumption. *American Economic Review* 98(4):1553–1577.

September 23

Lecture 6. Putting Consumer Theory to Work: Welfare.

- MWG 3.I.
- ◇ Einav, Liran, Amy Finkelstein, and Mark R. Cullen. 2010. Estimating Welfare in Insurance Markets Using Variation in Prices. *Quarterly Journal of Economics* 125(3):877–921.
- ◇ Jones, Charles I., and Peter J. Klenow. 2016. Beyond GDP? Welfare across Countries and Time. *American Economic Review* 106(9):2426–2457.

September 27

Lecture 7. General Equilibrium: Exchange Economies 1.

- MWG 15.A–15.B.

September 29

Lecture 8. General Equilibrium: Exchange Economies 2.

- MWG 17.A–17.C, 17.E.

October 4

Lecture 9. General Equilibrium: Welfare Theorems.

- MWG 16.A–16.D.
- ◇ Dworzak, Piotr, Scott Duke Kominers and Mohammad Akbarpour. 2021. Redistribution Through Markets. *Econometrica* 89(4): 1665–1698.

October 6

Lecture 10. Review.

October 13

Midterm Exam.

- During lecture hours.
- Open book exam: you are free to consult any material.
- No collaboration.

October 18

Lecture 11. Production.

- MWG 5.A, 5.B.
- ◇ Gibbons, Robert. 2005. Four formal(izable) theories of the firm? *Journal of Economic Behavior & Organization* 58(2):200–245.

October 20

Lecture 12. Profit Maximization and Cost Minimization.

- MWG 5.C.
- ◇ Topalova, Petia, and Amit Khandelwal. 2011. Trade Liberalization and Firm Productivity: The Case of India. *Review of Economics and Statistics* 93(3):995–1009.

October 25

Lecture 13. Putting Producer Theory to Work: Comparative Statics.

- MWG 12.A, 12.B.
- Milgrom, Paul, and Chris Shannon. 1994. Monotone Comparative Statics. *Econometrica* 62(1): 157–180.
- ◇ Costinot, Arnaud. 2009. An Elementary Theory of Comparative Advantage. *Econometrica* 77(4):1165–1192.

October 27

Lecture 14. Putting Producer Theory to Work: Technical Change.

- ◇ Acemoglu, Daron. 2002. Technical Change, Inequality, and the Labor Market. *Journal of Economic Literature* 40(1):7–72.

November 1

Lecture 15. General Equilibrium with Production.

- MWG 15.C, 15.D.

November 3

Lecture 16. General Equilibrium and Government Policies.

- ◇ Chetty, Raj. 2009. Sufficient Statistics for Welfare Analysis: A Bridge Between Structural and Reduced-Form Methods. *Annual Review of Economics* 1: 451–488.
- ◇ Kleven, Henrik J. 2021. Sufficient Statistics Revisited. *Annual Review of Economics* 13:.

November 8

Lecture 17. General versus Partial Equilibrium.

- MWG 15.3.
- ◇ Acemoglu, Daron. 2010. Theory, General Equilibrium, and Political Economy in Development Economics. *Journal of Economic Perspectives* 24(3): 17–32.
- ◇ Matsuyama, Kiminori. 1992. Agricultural Productivity, Comparative Advantage, and Economic Growth. *Journal of Economic Theory* 58(2):317–334.
- ◇ Hausmann, Ricardo, and Dani Rodrik. 2003. Economic Development as Self-discovery. *Journal of Development Economics* 72(2):603–633.

November 10

Lecture 18. Market Failures 1.

- MWG 11.A, 11.B.

- ◇ Kremer, Michael, and Charles Morcom. 2000. Elephants. *American Economic Review* 90(1):212–234.

November 10

Lecture 19. Market Failures 2.

- MWG 11.C, 11.D.

- ◇ Kremer, Michael, and Charles Morcom. 2000. Elephants. *American Economic Review* 90(1):212–234.

November 17

Lecture 20. Choice under Uncertainty 1.

- MWG 6.A, 6.B

- ◇ Machina, Mark J. 1987. Choice Under Uncertainty: Problems Solved and Unsolved. *Journal of Economic Perspectives* 1(1):121–154.

November 22

Lecture 21. Risk Attitudes.

- MWG Chapter 6.C, 6.D.

- ◇ Ambrus, Attila, Markus Mobius, and Adam Szeidl. 2014. Consumption Risk-sharing in Social Networks. *American Economic Review* 104(1):149–182.

- ◇ Banerjee, Abhijit V., and Esther Duflo. 2003. Inequality and Growth: What Can the Data Say? *Journal of Economic Growth* 8:267–299.

November 29

Lecture 22. Intertemporal Choice.

- MWG 20.A, 20.B.

- ◇ Ashraf, Nava, Dean Karlan, and Wesley Yin. 2006. Tying Odysseus to the Mast: Evidence From a Commitment Savings Product in the Philippines. *Quarterly Journal of Economics* 121(2): 635–672.

December 1

Lecture 23. Review.