

Economics 2020a / HBS 4010 / HKS API-111
Microeconomic Theory I
Fall 2009

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Meetings: Mon. and Wed. from 8:35 – 9:55 in room L-230 at the Kennedy School.

IMPORTANT NOTE: There are two “Littauer” buildings at Harvard. The Economics Department is in one. The other is at the Kennedy School.

Course Objectives: API-111 is the first semester in a year-long course in microeconomic theory that serves as an applied alternative to the more theoretical microeconomics sequence of Economics 2010a and 2010b. Intended primarily for students who anticipate doing original research employing the tools of microeconomic theory, this doctoral-level course is designed for the dual purposes of giving students a systematic grounding in microeconomics and preparing them to use economic models in their own research. It addresses the broad methodological topics of consumption theory, production theory, general equilibrium, industrial organization, information economics, and game theory. Course readings are chosen to demonstrate how each theoretical idea takes shape in published research on applied topics in microeconomics, organizational analysis and political science.

Audience: The API 111-112 sequence is suitable for doctoral students in any field and for advanced Public Policy (MPP or MPA) students in the Kennedy School. However, it is primarily intended for students who will be reading or producing research with microeconomic content. While the topics in this course are mathematical, the emphasis is on economic content and research methodology rather than proofs and technical details. Nevertheless, mathematical arguments are employed to help explain the intuition of the theories studied. Students without strong background in the areas mentioned below (see prerequisites) will likely be better served by delaying the API 111-112 sequence until they develop the proper background.

Prerequisites: The formal prerequisite for the course is Multivariate Calculus (typically two years of college calculus). It is also helpful to have background in calculus-based probability theory (e.g. API-201A or Statistics 110) and intermediate microeconomics (e.g. API-101A or Economics 1011).

Students who do not have all of these prerequisites may still be able to enroll in the course, but should consult with Professor Avery before doing so.

Readings: The main text for the course is Andreu Mas-Colell, Michael D. Whinston and Jerry R. Green, Microeconomic Theory (Oxford University Press, 1995), also known as MWG. Other alternative texts include David Kreps, A Course in Microeconomic Theory (Princeton University Press, 1990), and Hal Varian *Microeconomic Analysis*. In addition, Angus Deaton and John Muellbauer, Economics and Consumer Behavior (Cambridge University Press, 1980) provides an alternative treatment of consumer theory, the subject of the first unit of the course. Copies of all texts as well as additional materials will be made available through the KSG and Baker Business libraries.

Nolan Miller, who taught the course for many years, produced a set of lecture notes as a supplement to the material in Mas-Colell, Whinston, and Green. These notes will be available through the course website. Students looking for a math reference should consider Simon and Blume, *Mathematics for Economists* or Chiang, *Fundamental Methods of Mathematical Economics*.

Review Sessions: The Teaching Fellows will be conducting weekly review sessions, which will go over difficult material from the lectures and readings. Identical review sessions will be held at three different times each week, to guarantee that almost everyone will be able to regularly attend one. Review sections are tentatively planned for Thursday 4 – 5:30; Friday 8:30 – 10; and Friday 10 – 11:30.

Requirements and Evaluation: Evaluation will be based on problem sets, a midterm exam, and a final exam. The midterm will comprise approximately 1/3 of the final grade, the final exam approximately 2/3 of the final grade, and homework will be used in order to determine grades for students who are “on the border” between two grades.

Problem sets will be assigned each week, to be completed by noon on the due date (typically Wednesday). Assignments should be turned in during class or put in the API 111 drop box below the PhD mailboxes (around the corner from L239 on the second floor of the Kennedy School).⁷

A full set of practice problems and solutions will be provided on the course website. Typically there are about four problems per lecture, designed to highlight the key technical skills and concepts associated with each lecture. It is strongly recommended that students devote time to working through these problems and solutions rather than trying to build a comprehensive understanding of the material in the textbook.

Web site: Relevant course materials will be posted on the FAS web site for this course: <http://www.courses.fas.harvard.edu/~ec2020a/>.

Schedule of Lectures and Readings

UNIT 1: CONSUMER THEORY

Lecture 1 (September 2): Constrained Choice and Revealed Preferences

Readings: MWG Ch. 2A – 2F, Miller Notes Ch. 1 – 2.7.

NO CLASS ON SEPTEMBER 7 (LABOR DAY)

Lecture 2 (September 9): Specialization vs. Diversification in Consumer Choice

Readings: MWG 3A – 3C, Miller Notes 3.1 – 3.3.

Lecture 3 (September 14): Tradeoffs and Optimal Consumption

Readings: MWG 3D, Miller Notes 3.3

Lecture 4 (September 16): Wealth and Consumer Choice

Readings: Miller Notes 4.1

Lecture 5 (September 21): The Maximum Principle, Duality and the Consumer Price Index

Readings: MWG 3E – 3F, Miller Notes 3.4

Optional Readings:

Michael Boskin, et. al. “Consumer Prices, the Consumer Price Index and the Cost of Living,” Journal of Economic Perspectives, Winter 1998, p. 3-26.

Jerry Hausman, “Sources of Bias and Solutions to Bias in the Consumer Price Index,” Journal of Economic Perspectives, Winter 2003, p. 23-44.

Lecture 6 (September 23): Welfare Evaluation

Readings: MWG 3G, 3I, Miller Notes 3.4.

Lecture 7 (September 28): Empirical Estimates of Consumer Welfare

Optional Readings:

Robert Jensen and Nolan Miller, “Giffen Behavior: Theory and Evidence”, American Economic Review, forthcoming.

Robert Jensen and Nolan Miller, “Do Consumer Price Subsidies Really Improve Nutrition,” Nutrition,” Kennedy School working paper..

UNIT 2: CHOICE UNDER UNCERTAINTY

Lecture 8 (September 30): Choice under Uncertainty

Readings: MWG 6A – 6B, Miller Notes 6.1

Lecture 9 (October 5): Risk Aversion

Readings: MWG 6C, Miller Notes 6.2

Lecture 10 (October 7): Insurance and Investment

Readings: Miller Notes 6.3

NO CLASS ON MONDAY OCTOBER 12 (COLUMBUS DAY).

Lecture 11 (October 14): Comparing Distributions using Stochastic Dominance Wednesday, October 7

Readings: MWG 6D, Avery Notes

MIDTERM EXAMINATION – Monday, October 19 (covers Lectures 1 to 10).

UNIT 3: THE POSITIVE THEORY OF MARKETS

Lecture 12 (October 21): Technological Constraints and Profit Maximization

Readings: MWG 5 A-C, Miller Notes 5 – 5.2

Lecture 13 (October 26): Production Costs and Industry Structure

Readings: MWG 5D, Miller Notes 5.3- 5.5

Lecture 14 (October 28): Supply and Demand; Partial Equilibrium Monday, October 26

Readings: MWG 10.B – 10.D, Miller Notes 7.1 – 7.2

Lecture 15 (November 2): Tax Incidence Monday, November 2

Readings: MWG 10.B – 10.D, Miller Notes 7.1 – 7.2

Optional Reading: “\$2.00 Gas! Studying the Effect of a Gas Tax Moratorium,” Joseph J. Doyle and Krislert Samphantharak, *Journal of Public Economics*, 2008.
http://www.mit.edu/~jjdoyle/doyle_samphantharak_jpube_may07.pdf

Lecture 16 (November 4): Exchange Equilibrium

Readings: MWG 15.A

Lecture 17 (November 9): The Philosophy of Markets (First and Second Welfare Theorems)

Readings: MWG 15.B

NO CLASS ON WEDNESDAY NOVEMBER 11 (VETERAN'S DAY)

Lecture 18 (November 16): Market Prices and Coordination of Economic Activities

Readings: MWG 16.F – 16.G

UNIT 4: FAILINGS OF MARKETS

Lecture 19 (November 18): Externalities, Property Rights and Coase's Theorem

Readings: MWG 11.B – 11.C, Miller Notes 8.1 – 8.2.

Lecture 20 (November 23): Monopoly Pricing

Readings: MWG 12.A – 12.B, Miller Notes 9.1 – 9.2

Lecture 21 (November 25): Price Discrimination

Readings: Miler Notes 9.3

Lecture 22 (November 30): Cournot Competition

Readings: MWG 12.C

Lecture 23 (December 2): The Law of One Price

Readings: TBA