

John F. Kennedy School of Government

**API-111 / Economics 2020a / HBS 4010
Microeconomic Theory I
Fall 2008**

Syllabus

Faculty Information:

Faculty: Chris Avery
chris_avery@harvard.edu
KSG L208 Office Hours: TBA.
617-496-4063

Teaching Fellows: Sam Richardson

Contact information will be distributed the first day of class and posted on the course web site.

Location: The course meets Mon. and Wed. from 8:35 – 9:55 in L230 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.

Schedule: This course runs on the FAS course schedule. The first meeting will be on Monday, 9/15, and the last meeting will be on Tuesday, 12/17. The final exam will be during the January exam period, at the time chosen by FAS. Unfortunately, the date is not yet available. We will let you know the date as soon as it is published, but attendance at the final exam is mandatory. The review section schedule will be announced later.

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

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.

The course is also listed in the Economics department as Economics 2020a and in the Business School as HBS 4010.

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: *Permission of the instructor is required in order to take this course.* Prior to enrolling in this course, students should possess competence in the following areas:

- 1) Multivariate Calculus (typically two years of college calculus).
- 2) Probability theory (typically one year of advanced, calculus-based, undergraduate probability).
- 3) Intermediate microeconomic theory (at the level of API-101A or a similar undergraduate course in intermediate microeconomics).

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. Two optional texts will also be made available at the Coop. They are Silberberg and Suen, *The Structure of Economics: A Mathematical Analysis*, and Jehle and Reny, *Advanced Microeconomic Theory*. These texts are at a slightly lower level than MWG, but students have found them useful in the past. Other alternative texts include David Kreps, *A Course in Microeconomic Theory* (Princeton University Press, 1990), and Hal Varian *Microeconomic Analysis*. Copies of all texts as well as additional materials will be made available through the KSG and Baker Business libraries.

Students looking for a math reference should consider Simon and Blume, *Mathematics for Economists* or Chiang, *Fundamental Methods of Mathematical Economics*.

Administration: Reading assignments and problem sets for this course are announced in class and posted on the course web site. Faculty and Teaching Fellow office hours will be posted on the course web site.

List of Topics: The tentative list of topics for Fall 2007 is:

1. Static Consumer Theory (6 lectures)
2. Choice Under Uncertainty (5 lectures)
3. Production Theory (3 lectures)
4. Partial Equilibrium and General Equilibrium (6 lectures)
5. Monopoly and Pricing (3 lectures)

Since this course is part of a two-semester sequence, there may be some rearrangement of the topics between the two semesters. The final syllabus will be distributed in class and posted on the course web site.

Review Sessions & Problem Sets: 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 KSG).

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 four different times each week, to guarantee that almost everyone will be able to regularly attend one. Review sections are TBA.

Requirements and Evaluation: Evaluation will be based on problem sets, a midterm exam, and a final exam. The midterm (date TBA) 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.

Lectures and Readings

UNIT 1: CONSUMER THEORY

Lecture 1 (9/15): Course Overview, Introduction to Consumer Theory

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

Lecture 2 (9/17): Preferences and Utility Functions

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

Lecture 3 (9/22): Utility Maximization and the Consumer Problem

Readings: MWG 3D, Miller Notes 3.3

Lecture 4: (9/24) Properties of the Consumer Problem

Readings: Miller Notes 4.1

Lecture 5 (9/29): Applications of Demand Elasticity: Gas Prices and Taxes

Readings: TBA

Lecture 6: (10/1) Expenditure Minimization and Duality

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

Lecture 7: (10/6): Inferior Goods and the Slutsky Equation.

*Readings: “Giffen Behavior and Subsistence Consumption,” Robert Jensen and Nolan Miller, forthcoming American Economic Review.
http://www.hks.harvard.edu/nhm/paper_files/giffen_subsistence.pdf*

Lecture 8: (10/8) Welfare Evaluation

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

Lecture 9 (10/15): Choice under Uncertainty

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

Lecture 10: (10/20) Expected Utility Representation

Readings: MWG 6C, Miller Notes 6.2

Lectures 11-12 (10/22 and 10/27): Stochastic Dominance

Readings: MWG 6D, Avery Notes

MIDTERM EXAMINATION (tentative scheduled for Wednesday, October 29)**UNIT 2: PRODUCER THEORY**

Lecture 13 (11/3): Technology and Profit Maximization

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

Lecture 14 (11/5): Production with one output.

Readings: MWG 5 C-D, Miller Notes 5.3- 5.5

Lecture 15 (11/10): Cost Minimization, “Welfare Theorems”

Readings: MWG 5 C – D, G, Miller Notes 5.6 – 5.8

UNIT 3: GENERAL EQUILIBRIUM

Lecture 16 (11/12): Supply and Demand; Partial Equilibrium

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

Lecture 17 (11/17): Comparative Statics with Partial Equilibrium

Readings: MWG 10.D – 10.F, Miller Notes 7.3 – 7.4

Lecture 18 (11/19): Exchange Equilibrium

Readings: MWG 15.A – 15.B

Lecture 19 (11/24): General Equilibrium with Production

Readings: MWG 15.C – 15.D

Lecture 20 (11/26): Applications: Tiebout Sorting and Segregation

Readings: TBA

UNIT 4: MARKET FAILURES**Lecture 21 (12/1): Externalities and Public Goods**

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

Lecture 22 (12/3): Property Rights and Coase's Theorem

Readings: MWG 11.D – 11.E, Miller Notes 8.3 – 8.4

Lecture 23 (12/8): Monopoly

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

Lecture 24 (12/10): Price Discrimination and Nonlinear Pricing

Readings: Miller Notes 9.3

Lecture 25 (12/15): Ramsey Pricing

Readings: Miller Notes 9.4 – 9.5