

**API 111 / ECON 2020A / HBSDOC 4010**  
**Microeconomic Theory I**  
**Harvard University • Fall 2021**

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Office Hours: Mondays 15.00-16.00

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*Please include “API 111” in the subject line of all course-related e-mails.*

Class Meetings: Monday & Wednesday 08.30–9.45 in R304

Review Sections: Fridays 08.30–9.45 in L280

Website: <<https://canvas.harvard.edu/courses/93611>>

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## **Overview**

API 111 is a comprehensive course in economic theory designed to prepare doctoral students for research in economics. Topics include consumption, production, choice under risk and uncertainty, markets, and general equilibrium theory. Topics will be motivated by appealing to related recent theoretical and applied economics research.

## **Audience**

API 111 is a comprehensive course in economic theory designed for doctoral students in all parts of the university.

Undergraduates with appropriate background are welcome, subject to the instructor’s approval.

## **Requirements and Grading**

The course requirements include the completion of several problem sets, a midterm exam, and a final exam.

	Grade Percentage
Problem Sets	10 %
Midterm Exam	30 %
Final Exam	60 %

## 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 18.

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 on a “check+/check/check−/no credit” or, equivalently, a “3/2/1/0” scale. The problem sets are meant to be a commitment device to ensure that each person stays current with the material. The final grade for the problem sets will be determined by adding up the individual scores on each problem set (and, of course, appropriately scaling to correspond to 10% of the overall grade).

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. 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 sources: the slides and the textbook. Slides will be uploaded to canvas.

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.

## Important Dates

Exams are scheduled for the following dates:

- Midterm Exam: 08.30–09.45, Wednesday, October 20, 2021.
- Final Exam: 14.00–17.00, Tuesday, December 14, 2021.

Problem sets are due on the following dates:

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

There are no lectures on the following dates:

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

## Course Calendar

The calendar will be adjusted depending on our progress. I might also make executive decisions to change the material.

### September 1

Lecture 1. Preferences in the Abstract.

- MWG 1.A–1.D.

### September 8

Lecture 2. Preferences and Consumption.

- MWG 3.B,3.C.

### September 13

Lecture 3. The Consumer Problem.

- MWG 3.D.

### September 15

Lecture 4. Revealed Preference.

### September 20

Lecture 5. Differentiable Utility.

- MWG 3.D.

### September 22

Lecture 6. Expenditure and Hicksian Demands.

- MWG 3.E,3.G,3.H.

### September 27

Lecture 7. Integrability and Welfare Measurement.

- MWG 3.I.

### September 29

Lecture 8. Choice under Uncertainty 1.

- MWG 6.A, 6.B

### October 4

Lecture 9. Choice under Uncertainty 2.

- MWG Chapter 6.F.

### October 6

Lecture 10. Risk Attitudes.

- MWG Chapter 6.C, 6.D.

### October 13

Lecture 11. Production and Monotone Comparative Statics 1.

- MWG 5.B, 5.C.

### **October 18**

Lecture 12. Production and Monotone Comparative Statics 2.

- Milgrom, Paul, and Chris Shannon. 1994. Monotone Comparative Statics. *Econometrica* 62(1): 157–180.

### **October 20**

Midterm Exam.

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

### **October 25**

Lecture 13. Intertemporal Choice: Consumption, Savings and Production.

- Chapters 4 and 5, Stokey, Lucas and Prescott “Recursive Methods in Economic Dynamics.”

### **October 27**

Lecture 14. Introduction to General and Partial Equilibrium.

- MWG 10.B–10.D.
- ◇ 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 1**

Lecture 15. Exchange Economies.

- MWG 15.A–15.B.

### **November 3**

Lecture 16. Equilibrium Existence.

### **November 8**

Lecture 17. Welfare Theorems.

### **November 10**

Lecture 18. Uncertainty in General Equilibrium 1.

### **November 15**

Lecture 19. Uncertainty in General Equilibrium 2.

### **November 17**

Lecture 20. Uncertainty in General Equilibrium 3.

### **November 22**

Lecture 21. Two-Sided Markets 1.

**November 29**

Lecture 22. Two-Sided Markets 2.

**December 1**

Lecture 23. Review.