

Economics 1011a. Microeconomic Theory. Fall 2024

Updated: August 19th, 2024

Tuesdays and Thursdays, 12:00 pm – 1:15 pm, Sever 113

Teaching Staff

Professor Edward Glaeser, eglaeser@harvard.edu

Office hours: to sign up for office hours with Professor Glaeser, please email Jamie Murray (jamiemurray@fas.harvard.edu) to schedule an appointment.

Teaching Fellows

Aakaash Rao, arao@g.harvard.edu

Office hours: By appointment. To schedule, please email Aakaash with a list of available windows. Aakaash will not provide assistance with problem sets outside his weekly section.

Simon Essig Aberg, sessigaberg@g.harvard.edu

Andrew Kao, andrewkao@g.harvard.edu

Course Assistants

Our CAs will post their Office Hours on the class discussion forum, Ed.

Please email Gabe regarding any administrative issues. Please do not email Professor Glaeser with questions about the course unless absolutely necessary.

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Course Website

<https://canvas.harvard.edu/courses/138439>

The latest version of this syllabus can be found on the website and will also be posted on the class discussion forum.

Ed Discussion Forum

Our class discussion forum is on Ed—please check this regularly!

<https://edstem.org/us/courses/61657/discussion>

Our forum will be continuously updated with course-related news and announcements (including section and OH locations and times). Additionally, it is meant to facilitate fast responses to questions from classmates and staff and will feature a mechanism to make your posts anonymous to students and staff alike. We encourage you to post questions to the discussion forum rather than sending emails to TFs or CAs—you should hear back much faster.

To join, please log in through Canvas first. You can then add a password to your Ed profile (from *Account > Settings*) and subsequently log in directly through Ed as well.

Lectures

Lectures will be held twice a week, on Tuesdays and Thursdays from 12:00 pm to 1:15 pm (Sever 113). Lectures will focus on the core theoretical, mathematical and economic content of the class.

Sections

Every week there will be two types of sections:

- Aakaash will hold a single section for the whole class every week, starting the **first week** of class. These sections will be focused on working through problems and will generally be recorded. Attendance is very strongly encouraged but not required. The time of this meeting will be announced in the first lecture.
- The CAs will hold weekly sections starting the second week of class. Sections will review the previous week's problem set and go over the upcoming problem set. **Attendance is required** and will count toward your final grade.

Section scheduling will be done during the first week of class. After completing the online poll, we will email you with information on your section's location and time.

Meetings with Professor Glaeser

Each student should meet with Prof. Glaeser at least once in the semester. The plan is to organize meetings in small groups, at which students can ask questions about the material and discuss how

the economic theory from lectures applies to real-world policy issues. Further details will be announced in the coming weeks.

Textbooks

There is no required textbook for this course.

Three former CAs, Kevin Bi, Jimmy Lin and Tim Hua, have started writing an Econ 1011a textbook based on Professor Edward Glaeser's lectures from past years. The textbook is not yet complete, but it may be helpful as an additional resource. The PDF can be found here:

<https://github.com/tim-hua-01/ECON-1011A-Textbook/blob/master/textbook.pdf>

In the past, students have also found the following two textbooks helpful.

1. Walter Nicholson, *Microeconomic Theory: Basic Principles and Extensions*, any ed.

We will not follow this textbook at all. It is only a basic reference. If you would like to get it, get the cheapest (old) edition you can find.

2. Hal Varian, *Microeconomic Analysis*, 3rd ed., 1992.

This text was written primarily for graduate students. It covers most of the topics that we will discuss in class, albeit at a somewhat more advanced level.

Supplemental Videos

Professor Glaeser has recorded a series of videos that supplement Econ 1011a lectures by walking through mathematical derivations at a slower pace and in greater detail than possible in class. They are posted on his web page under Classes and then Course Videos. Students are encouraged to watch these videos and work through the examples before and after the corresponding lecture.

Lecture Notes

The CAs have prepared a comprehensive set of lecture notes for each lecture. These notes are meant to supplement the textbook and provide you with a way to review the content of each lecture. These will be posted on Canvas after the conclusion of each lecture.

Course Prerequisites

1. Real comfort with multivariable calculus. By far the most important thing! You most likely cannot take Math 21a simultaneously with this course. Math 22, 25 or 55 can be taken simultaneously. You have the necessary math background for the course if you know how to complete every problem on Problem Set 0.
2. Economics 10 or AP Economics. If you haven't taken either of these, but have strong math skills and are willing to work hard, you will be fine.

Grading

Final exam (TBD)	40%
Midterm exam (TBD)	20%
Group modeling projects (TBD)	20%
Problem sets (see below)	10%
Attendance	10%

This is a difficult class with excellent students, and we take this into account when assigning final grades. Historically, the median grade in the class has been right on the B+/A– border, and trending upwards over the years. This is likely to be true again. However, there are no guarantees.

Problem Set Rules

We expect to have eight-nine graded problem sets throughout the semester. They will usually be posted on the course website on Thursdays, and then due the following Thursday. All problem sets turned in after the specified deadline will receive a score of zero. **There are no exceptions to this policy, and we will enforce it strictly.** Typed submissions (e.g. in LaTeX) are very strongly encouraged. Graders reserve the right to dock points if they find the submission difficult to read or understand.

You may drop or not hand in one problem set with no penalty.

Grading:

- Check: 100 points
- Check Minus: 50 points
- Zero: 0 points

You are encouraged to work with others on the problem sets. Please acknowledge students with whom you collaborate. Students working together should **not** turn in identical or almost identical problem sets, which would result in a grade of Zero or Check Minus. In past years students have found that doing problem sets thoroughly is vital to doing well on the exams.

Problem Set 0 is posted on the course website. Being able to solve these problems indicates that you have the math background necessary for the course. We will not be grading Problem Set 0.

The first problem set will be posted Thursday, September 5th and is due the following Thursday.

Independent Modeling Projects

You will have to turn in three models for this class—solve them and provide results. The first model can be done in groups of four, the second model in groups of two, and the third independently. The framing of the problems will be given out two weeks before the model is due. The first modeling project is worth 5% of your grade, the second is worth 8% and the third is worth 12%.

Office Hours Policy

The TFs and CAs have been instructed to provide very limited *ex ante* assistance on the problem sets. This is not because they are lazy or mean, nor is it meant to frustrate you (although many of you will likely find it frustrating). It is our philosophy that you will get more out of the course by struggling with the material. Do not interpret this to mean that you should not ask your TF questions or attend their office hours! Quite the opposite—every one of you should have a close relationship with your TF. They and the CAs are a valuable resource that you will need to utilize.

What Should You Learn From This Course?

How to sensibly model any real world phenomenon/puzzle. This skill is the core skill in economics. Usually, undergraduates never learn it and get a watered down version of economics. You still have that option; you can take one of the other courses. However, this is Harvard, and you should have the option of taking an economics course that pushes you.

Tentative Schedule

Date	Event	Topics
Tu Sep 3	Lecture 1	Course logistics. Introduction. Modeling labor supply.
Th Sep 5	Lecture 2	Modeling and firms. Mathematics of optimization. Firm profit.
Tu Sep 10	Lecture 3	Firms with multiple inputs. Returns to scale. Short run vs. long run.
Th Sep 12	Lecture 4	More on firms. Envelope theorem. Cost minimization.
Tu Sep 17	Lecture 5	Cities.
Th Sep 19	Lecture 6	Consumer behavior. Preferences and utility.
Tu Sep 24	Lecture 7	More on consumers. Lagrangians. Expenditure function.
Th Sep 26	Lecture 8	The Slutsky Equation. Marshallian vs. Hicksian demand. Good types.
Tu Oct 1	Lecture 9	Marriage and fertility
Th Oct 3	Lecture 10	Consumption over time: discounting, separability. Investment.
Tu Oct 8	Lecture 11	More on consumption: multiple periods. Behavioral economics.
Th Oct 10	Lecture 12	Choice under certainty. Expected utility. Insurance.
Tu Oct 15	Lecture 13	More on uncertainty. Lotteries. Risk aversion.
Th Oct 17	Lecture 14	Review for Midterm – Aakaash Rao.
<i>Tu Oct 22</i>	<i>Midterm</i>	
Th Oct 24	Lecture 15	Crime and riots.
Tu Oct 29	Lecture 16	Compensating variation. Arbitrage. Urban economics. Housing and house prices.
Th Oct 31	Lecture 17	Aggregation of supply and demand. Production with entry.
Tu Nov 5	Lecture 18	General equilibrium: prices, consumer surplus. Exchange economies, Welfare Theorems.

Th Nov 7	Lecture 19	Market Failures: externalities, public goods. Global warming.
Tu Nov 12	Lecture 20	Monopoly and oligopoly: Cournot competition.
Th Nov 14	Lecture 21	Game theory: Nash Equilibrium, mixed strategies.
Tu Nov 19	Lecture 22	Sequential games: subgame perfection.
Th Nov 21	Lecture 23	Adverse selection: Bayesian equilibrium, signaling equilibria.
Tu Nov 26	Lecture 24	Moral hazard: insurance, wages.
<i>Th Nov 28</i>	<i>No Class</i>	<i>Thanksgiving Recess</i>
Tu Dec 3	Lecture 25	Political economy.