Economics 1011a. Microeconomic Theory. Fall 2014

Syllabus

Tuesdays and Thursdays, 11:30–1 pm, Jefferson Lab 250

Teaching Staff

Professor Giacomo Ponzetto

> Office Hours: Monday 2-4 pm, Littauer 124. Please sign up for office hours in advance using the sign-up sheet posted each week on Piazza

Teaching Fellows and Section Leaders:

> Andrew C. Das Sarma (Head TF), dassarma@college.harvard.edu
> Office Hours: Wednesday 10 pm - 12 am, Eliot dhall

> William J. Azébazé, william_azebaze@hks15.harvard.edu
> Office Hours: Monday 4:30-6:30 pm, Littauer

> Juan I. Eyzaguirre, jeyzaguirre@mba2015.hbs.edu
> Office Hours: Tuesday 3-5 pm, Littauer

> Kevin He, he02@fas.harvard.edu
> Office Hours: Tuesday 4-6 pm, Littauer

Please email economics1011a@gmail.com (*not* Prof. Ponzetto) regarding any admin issues. Someone will respond to questions at this address. See our Office Hours Policy below.

Course Website

`http://isites.harvard.edu/icb/icb.do?keyword=k104801`
The latest version of this syllabus may be found on the website and on Piazza.

Piazza

We will be using the Piazza service as a class discussion forum. This will be continuously updated with course-related news and announcements (including section and OH information). Additionally, it is built to facilitate fast responses to questions from classmates and staff, and features a mechanism to make your posts anonymous to students and staff alike. We encourage you to post questions to Piazza rather than sending emails to TFs. Our homepage is at `https://piazza.com/harvard/fall2014/econ1011a/home`.

Sections

The TFs will be holding weekly sections. If you do not go you will be totally lost very quickly.

On the first week of the class there will be an *optional* math review in section (time and location TBA). You may consult the review notes posted on the course website to decide whether or not you should go. Feel free to attend any section you want (first week only).

Sectioning will be done online during the second week at `http://www.section.fas.harvard.edu`. We will email you with the link when we are ready to section.

Section Schedule

Tentative schedule, beggining on Week 2:

Day	Time	Location	TF
Tuesday	2 pm	TBA	He
Tuesday	3 pm	TBA	He
Wednesday	4pm	TBA	Das Sarma
Thursday	3 pm	TBA	Eyzaguirre
Friday	1 pm	TBA	Azébazé

Textbooks

There is no textbook for this course. In the past, however, students have found the following two books helpful.

1. Nicholson, Walter. 1972-2012 *Microeconomic Theory: Basic Principles and Extensions,* any edition.

   We will not follow this at all, it is only a basic reference. Get a cheap old edition if you want to.

2. Varian, Hal R. 1992. *Microeconomic Analysis*, 3rd edition. New York: Norton.

   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.

Prerequisites

1. Real comfort with multivariable calculus. By far the most important thing! You probably cannot take Math 21a simultaneously with this course. Math 23, 25 or 55 can be taken simultaneously. You have the necessary math background for the course if and only if you know how to complete every problem on Problem Set 0. Higher math (the abstract proof-oriented sort) is not necessary; this is far from a math course.

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.

Concentration Requirement

Economics 1011a fulfills the intermediate microeconomic theory requirement for Economics concentrators. Students may take either Economics 1010a or Economics 1011a for credit. **Starting in Fall 2014, concentrators who receive less than a B- in this course (or in Econ 1010a) must enroll in Economics 975a (Microeconomic Theory Tutorial).**

Exception: Concentrators who already took their *macroeconomic* theory requirement (Econ 1010b or 1011b) prior to Fall 2014 are held to the old rule: concentrators who earn below an average grade of B-/C+ in their two economic theory requirements must enroll in Econ 975

Grading

Final exam	35%
Midterm exam	25%
Independent modeling projects	25%
Problem sets	15%

We do not keep any records of attendance. Participation during lecture is highly encouraged and may make a difference in your grade in marginal cases.

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. It is likely to be true again. However, there are no guarantees.

Problem Sets

We expect to have approximately nine problem sets throughout the term. They will usually be posted online Thursdays after class, and then due the following Thursday at the *beginning* of class. All problem sets turned in after 11:40 AM will receive a score of zero. **There are no exceptions to this policy, and we will enforce it strictly.** We *strongly* encourage typed submissions.

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. However, people working together should *not* turn in identical problem sets, which would result in a grade of Check Minus. In past years students have found that doing problem sets thoroughly is *vital* to doing well on the exams.

We have included an *optional* Problem Set 0 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.

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 (up to) four; the second model in groups of two; the last model should be created independently. The framing of the problem will be given out two weeks before the model is due.

Office Hours Policy

If you have any admin questions (e.g., What is going to be on the midterm? Why didn't I get a top grade on the problem set?), please do not come directly to office hours but rather email economics1011a@gmail.com. The teaching staff will respond to your questions at this address, and we may follow up by inviting you to come discuss the matter further during office hours. However, please come directly to office hours only to discuss substantive economic questions.

If you have clarifying questions about the material covered in class and in section you should talk to your TF first. It would also be an excellent idea to post your question on Piazza, so everyone can benefit from reading the answer.

If you'd like to discuss economic puzzles that go beyond what has been covered in class, either in depth or in breadth, Prof. Ponzetto would be delighted to do so during his office hours. In fact, you should make a point of coming and meeting with him at least once during the term to talk about economics.

The TFs have been instructed to provide only limited ex ante assistance on the problem sets. This is not because they are lazy or mean, nor is it meant to frustrate you (though many of you may find it frustrating). Our philosophy is 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 are a valuable resource that you will need to make full use of.

What Should You Learn from This Course?

This is the hardcore track of intermediate microeconomics. It is pitched at a level intermediate between standard undergraduate classes and graduate classes. It is meant to be both hard and fun. You should learn how to sensibly model any real-world economic phenomenon or 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 intermediate micro courses. However, this is Harvard, and you should have the option of taking an economics course that pushes you.

Tentative Schedule

Day	Event	Topics
Sep. 2	Lecture 1	Course logistics. Introduction. Modeling labor supply
Sep. 4	Lecture 2	Modeling and firms. Mathematics of optimization. Firm profit
Sep. 9	Lecture 3	Firms with multiple inputs. Returns to scale. Short run vs long run
Sep. 11	Lecture 4	More on firms. Envelope theorem. Cost minimization
Sep. 16	Lecture 5	Cities.
Sep. 18	Lecture 6	Consumer behavior. Preferences and utility
Sep. 23	Lecture 7	More on consumers. Lagrangians. Expenditure function
Sep. 25	Lecture 8	The Slutsky Equation. Marshallian vs Hicksian demand. Good types
Sep. 30	Lecture 9	Marriage and Fertility
Oct. 2	Lecture 10	Consumption over time: discounting, separability. Investment
Oct. 7	Lecture 11	More on consumption: multiple periods. Behavioral economics
Oct. 9	Lecture 12	Choice under uncertainty. Expected utility. Insurance
Oct. 14	Lecture 13	More on uncertainty. Lotteries. Risk aversion
Oct. 16	Lecture 14	Compensating variation. Arbitrage. Urban economics. Housing and housing prices
Oct. 21	*Midterm*	
Oct. 23	Lecture 15	Crime and riots
Oct. 28	Lecture 16	Aggregation of supply and demand. Production with entry
Oct. 30	Lecture 17	General equilibrium: prices, consumer surplus. Exchange economies, welfare theorems
Nov. 4	Lecture 18	Market failures: externalities, public goods. Global warming
Nov. 6	Lecture 19	Monopoly and oligopoly: Cournot competition
Nov. 11	*No Class*	*Veterans' Day*
Nov. 13	Lecture 20	Game theory: Nash equilibrium, mixed strategies
Nov. 18	Lecture 21	Sequential games: subgame perfection
Nov. 20	Lecture 22	Adverse selection: Bayesian equilibrium, signaling equilibria
Nov. 25	Lecture 23	Moral hazard: insurance, wages
Nov. 27	*No Class*	*Thanksgiving*
Dec. 2	Lecture 24	Political economy