Econ 51: Economic Analysis II
Summer 2014

Instructor:
Mingjun Xiao <mjxiao@stanford.edu>;
TA:
TBD.

Class, Office Hours and Exam Schedule:

Class Time: 11:00am – 12:50pm on Tuesdays and Thursdays (8 weeks, 6/24—8/14);
Class Room: Landau Economics Building Room 139;

Instructor’s office hours:
3:00pm – 5:00pm on Thursdays, room 375B, Econ building;
TA’s office hours:
TBD.

The midterm will be in class on July 17th, Thursday;
The final will be on August 16th, Saturday, Room TBD.

Course Description:

This course explores selected topics in microeconomics, including decisions under uncertainty, general equilibrium, game theory, and theories of asymmetric information. This material provides the foundation of almost all formal models used in modern economics, and is therefore essential for almost all upper division courses in economics.

The basic question we are trying to answer in this class is the following. Suppose there are rational economic agents who interact (either in markets or through other institutions): what will happen? As we will see, the answer depends crucially on what we assume about the form of interaction.

Although we will try to focus on the economics and to provide some real-world examples that may show the relevance of the concepts we will cover, the course (as most modern economics) heavily relies on math, will require much work, and many of you may not find it easy. The recommended strategy is to study continuously, use the problem sets to make sure you keep up with the material, and come to me at the first sign of trouble.

Economics department common course policies:

All courses taught in the Stanford Department of Economics are governed by a common set of course management rules. A document explaining these rules is included on our coursework website, and on the Economics Department website at http://economics.stanford.edu/undergraduate/economics-common-syllabus. Please be
sure to read this document in its entirety, and contact me if you have any questions. Note that this is your responsibility to get familiar with these policies, and failure to do this does not constitute grounds for exceptions from these policies.

**Prerequisites:**

Econ 1A and Econ 50 must be completed before you enroll in Econ 51 (*Axess* will not allow you to enroll otherwise). There are no exceptions for these prerequisites. For more information on prerequisites, please contact the office for undergraduate studies at the economics department.

Since this is a class about microeconomics it will heavily rely on concepts which have been introduced in Econ 50. You may find it useful to refresh your memory using any of the textbooks listed below. In addition to Econ 50, you should be familiar with multivariate calculus and basic probability theory. In particular, you should be able to take derivatives, know some constrained maximization (e.g. be able to solve $\max(\log(x) + \log(y))$ s.t. $x+y=t$), and be able to solve simple non-linear equations. If you do not have a firm mathematical background, this class will be *very* difficult for you.

**Problem sets:**

Problem sets constitute a major part of the course grade, and an even larger part of your learning. There will be 4 problem sets during the quarter. It will be hard, and sometimes impossible, to understand the material covered in lecture without solving the problem sets, so please take the problem sets seriously. The problem sets are designed to be challenging, so some parts of them will be more difficult than the level of knowledge required for the midterm or final. Thus, not being able to solve all problem sets in full does not necessarily mean that you cannot do well in the exams. I encourage you to work in groups on problem sets, but you should submit your own write-up. If you are out of town, you can e-mail it to me at mjxiao@stanford.edu.

Late submissions of problem sets will not be accepted, with NO exceptions. All problem sets, answer keys, and handouts will be available on coursework soon after the submission deadline.

You can turn in your problem set in class on due day, or to my mailbox in Economics building, 2nd floor. All problem sets are due at 5:00pm on the due date.

Problem Set 1: Due 3rd July.
Problem Set 2: Due 15th July.
Problem Set 3: Due 31st July.
Problem Set 4: Due 14th August.

**Grading:**

The grade in the course will be based on three components: problem sets, a midterm exam, and a final exam. The lowest-grade problem set will be dropped. It is recommended to submit all problem sets.
The final grade for the course will be a weighted average of the above three components. The weighting system is designed to provide students who did not do well in the midterm an opportunity to do well in the course. For each student, we will calculate two averages. The first will apply weights of 15% to problem sets, 35% to the midterm, and 50% to the final. The second will apply weights of 10% to problem sets, 20% to the midterm, and 70% to the final. Your course grade will be the higher of the two. Thus, if you do poorly in the midterm, it will only count towards 20% of your final grade, provided that you do well in the final.

Letter grading is intended to reflect your understanding of the course material. A’s reflect an understanding of the concepts learned in the course, and an ability to apply those concepts elsewhere. B’s reflect understanding of the concepts. C’s are given to students who can solve questions similar to those already appeared in the problem sets. This ability is a minimal requirement to receive a passing grade in the course. Historically, about two percent of the students fail the course, although my aim and hope is that this can be reduced to zero.

Off-office hours help:

_Piazza_ used to be an online forum for students to submit questions and to help each other with the guidance of instructors and TAs. In case there has been sufficient enrollment of the course, piazza might be activated for this course. You will get email notifications upon when it is available and how you are going to use it.

You are encouraged to come to instructor’s or TA’s office hours, dissolving your problems in studying the course materials. If you happen to not be able to ask questions in office hours, you can email the instructor or TA.

Texts:

There is no required text. I will mostly rely on the material covered in lectures. For some parts of the class I will also post typed lecture notes on coursework. There are three textbooks that cover the same material, but in a less mathematically rigorous way than we will in class:


These books are excellent background readings and provide more intuition and examples, which is complementary to what we cover in class. I certainly recommend reading the relevant chapters in _one_ of these books, as we go through the quarter. However, _only_ the material I teach in class is relevant. Therefore, if you really do not want to buy/read any book, you should be fine coming to class regularly and doing the problem sets.
All three books listed cover similar material, so your best strategy is to choose one and stick to it. Varian is slightly more mathematically rigorous than the other two, so may be closer to what we cover in class. The other two are more “chatty” and potentially more entertaining. Many of you already own Besanko-Breautigam from Econ 50, and should be just fine if you keep using it rather than purchase a new book.

**Students with documented disabilities:**

Students who have a physical or mental impairment that may necessitate an academic accommodation or the use of auxiliary aids and services in a class must initiate a request with the Office with Accessible Education (OAE). The OAE will evaluate the request along with the required documentation, recommend appropriate accommodations, and prepare a verification letter dated in the current academic term in which the request is being made. Please contact the OAE as soon as possible; timely notice is needed to arrange for appropriate accommodations. The OAE is located at 563 Salvatierra Walk (phone 723-1066 Voice; 725-1067 TTY; http://studentaffairs.stanford.edu/oae).

**Course outline:**

I list below the main topics we will cover, the approximate number of lectures we will spend on each topic, and the relevant chapters in each of the books:

1. *Decisions under uncertainty* (3 lectures): Chapter 5 of Pindyck and Rubinfeld (P-R), Chapter 12 of Varian, Chapter 15.1-15.3 of Besanko and Braeutigam (B-B), and lecture notes.

2. *General equilibrium theory, Externalities, and Public goods* (6 lectures):
   - Chapters 16 and 18 of P-R, Chapters 31, 32, 34, and 36 of Varian, Chapters 16 and 17 of B-B, and lecture notes.

3. *Game theory* (4 lectures): Chapter 13 of P-R, Chapters 17, 27, 28, and 29 of Varian, Chapters 13, 14, and 15.4 of B-B, and lecture notes.

4. If time permits, *Asymmetric Information - Moral Hazard, Adverse Selection*: Chapter 17 of P-R, Chapter 37 of Varian, End of Chapter 15.3 of B-B, and lecture notes.