ECONOMICS 101A – FALL 2004
MICROECONOMIC THEORY

SYLLABUS (9/23/04)

This course is meant to introduce you to the world of formal economic modeling. Economic models are typically made of three components:

- Consumers;
- Firms;
- A market in which consumers and firms interact.

We deal with these three components sequentially. The course starts by introducing consumer preferences and utility function. We then move on to consider firms and production functions, and finally we study the market-clearing conditions.

The organizational details:

Course Time: Tuesdays and Thursdays, 11.00-12.30 in 150 GSPP

Teacher: Stefano DellaVigna, 515 Evans, sdellavi@econ.berkeley.edu
OH: W, 11-12
Th, 4-5

GSIs: Ada Chen, adachen@econ.berkeley.edu
Adriana Espinosa, espinosa@econ.berkeley.edu

Webpage: http://emlab.berkeley.edu/users/webfac/dellavigna/e101a_f04/e101a.shtml
You may also want to refer to last year's 101A webpage:
http://emlab.berkeley.edu/users/webfac/dellavigna/e101a_f03/101AF03.shtml

Textbook:
Walter Nicholson, *Microeconomic Theory – 9th Edition*, Southwestern Editors

Course grading:
30% 6 (or 7) Problem Sets
20% Midterm 1
20% Midterm 2
40% Final Exam (Thursday 12/16/04, 5-8pm)
The percentages above sum to 110%. The worst 10% of the score will not count toward your grades. For example, if the worst score is on the problem sets, the problem sets will only have 20% of weight. There is a second bonus. Class participation can increase the score by at most one grade; for example, from B to B+.

Miscellaneous questions:

1. Are problem sets required?
   Yes, problem sets are an integral part of the course. As you can notice, problem sets are also an important part of the grade. There will be a problem set handed out about every other week.

2. How important is attending class and reading the book?

You will really need to do both! The book unfortunately is not as close to the lectures as I would like it to be, so it definitely is not a substitute for attending class. I searched extensively for a better book, but could not find it. Coming to the lectures is very important. I will distribute handouts of my slides during class to help you take better notes and will post them afterwards on the web with corrections in case there were some mistakes. However, the handouts are not comprehensive: they do not include graphs and go quickly over certain topics that the book covers in more detail. Therefore, I think that you will find the book a useful complement to the classes. Day-by-day, I will indicate which pages in the book you are responsible for. You should feel free of course to read more!

3. Is it ok if I hand in the problems sets late?
   Unfortunately, it is not ok. The GSIs will not be able to accept problem sets turned in late. With a class this size we cannot do exceptions. Sorry.

4. Can I work on the problem sets with other people?
   Yes, you can and should. I strongly recommend that you form study groups with other people. In fact, one of the strongest reasons why we require problem sets is precisely the fact that you get to work on economics problems with other people, you discuss with them, and learn from the intuition of others. Nevertheless, we expect that you will write and turn in your own solution to the problem set. After you discuss with other people, you should make sure that you can write your own solution.

5. How do I know which questions are hard in the problem set?
   We try to give you an idea of that by the points assigned to the different exercises. More means harder. In any case, expect to work hard in order to be able to solve the exercises. But do not get frustrated. It is normal if you find the exercises hard! If you can only get half of an exercise done, just write that part done. This way you can get partial credit. Afterwards, by reading the solution to the problem set, you will pick up the rest.

6. How do I choose between this class and 100A?
   The answer depends on two things: you mathematical background and your interest in economics. As for the first, this course requires a more thorough knowledge of mathematical tools than 100A does. You are supposed to be comfortable with derivatives and integrals, since we are using them throughout the course. To give an example, you should know the difference between a total and a partial derivative.
   To succeed in this course, though, you will need more than just a knowledge of mathematics. I expect anyone who takes the class to be seriously interested in microeconomics, in writing simple models of the world. I will try throughout the course to give intuition and to stress the economic significance to the results we cover.
   If you do not feel comfortable with your mathematical background, but you have a strong interest for economics, you may still want to take this class. You should then be prepared to work very hard.
   If you neither have a strong mathematical background, nor a strong interest in microeconomics, I do not recommend that you take this course.

7. Is it ok to use the older Edition of the Nicholson book?
   Using the older (8^{th}) edition of the book is fine by me. The editors of books put out new editions more frequently than needed in order to penalize the used book market and sell more copies of the new book. I am all for saving on the exorbitant cost of the book. The

one think you will have to be careful about is page numbers. I will try to give page numbers for both new and old edition whenever possible.

8. What if I disagree about the grading of an exam?
   If we have miscounted points on the midterms or final, tell us immediately and we will correct. If you think that we have inappropriately scored an answer submit a complaint in writing (typed) to me. I will then regrade your test from beginning to end. You should keep in mind that this may decrease your final grade, but still you should feel free to submit complaints.

9. Who should I talk to if I have a question?
   The GSIs should be your primary contact for questions related to the problem sets or the exams. Ada and Adriana will hold regular office hours at a time they will announce. If you would like to talk to me, I am delighted to meet with you during my office hours. In particular, I am happy to discuss issues of economic substance, questions inspired by the lectures, and suggestions for your future studies. So, if a class made you wonder why consumers do things that they regret ex post (such as not exercising), or why the price of airline tickets varies so widely, I am more than happy to discuss issues like these with you. In general, feel free to come see me during office hours.

10. I would like to talk to Stefano in a more informal setting. Is it possible?
    Yes, it is. After class, each Tuesday and Thursday I will be heading toward Hearst Ave. to get a sandwich. I encourage groups of 2-4 students to join me to grab a sandwich and chat before I (we) head back to Evans. My treat!

11. I am not able to take exams in the normal time because of disability. What should I do?
    Definitely, come talk to me. You will need to provide some documentation, and we will arrange a suitable accommodation.

12. What should I expect to learn from this course?
    I would like you to be able to face a real world phenomenon/puzzle and be able to write down a sensible economic model of it. This will enable you to analyze more problems than you can imagine, ranging from economics to political science, from psychology to sociology. Perhaps, by the end of the course you will agree with me that microeconomics provides a parsimonious and insightful way to look at the world. That's my aspiration, and I will do my best to get you to share my enthusiasm for economics!

Here is a preliminary schedule of topics to be covered in class. I anticipate that there will be some changes to this schedule over time. I will distribute updated lists of topics covered as time goes on. The chapter numbers refer to the Nicholson book.

Basics

Lecture 1 (August 31).
Introduction
Maximization in One Variable (Ch. 2)
Maximization in Several Variables (Ch. 2)

Lecture 2 (September 2).
Maximization in Several Variables (Ch. 2), continued

Comparative Statics
Concavity and convexity
Problem Set 1 posted on web

Lecture 3 (September 7).
Concavity and convexity, continued
Constrained Maximization (Ch.2)

Consumers

Lecture 4 (September 9).
Constrained Maximization II (Ch.2)
Preferences and Utility (Ch. 3)

Lecture 5 (September 14).
Common Utility Functions
Utility Maximization and Choice (Ch. 4)
Problem Set 1 due in class

Lecture 6 (September 16).
Utility Maximization and Choice (Ch. 4)
Indirect Utility Function
Problem Set 2 posted on web

Lecture 7 (September 21).
Comparative statics
Expenditure Minimization

Lecture 8 (September 23).
Slutzky Equation
Income and Substitution Effects (Ch. 5)

Lecture 9 (September 28).
Labor Supply
Intertemporal Choice I
Problem Set 2 due in class

No lecture (September 30).
1st Midterm

Lecture 10 (October 5).
Economics of Altruism I
Choice under uncertainty (Ch. 8)
Introduction to Probability
Expected Utility
Problem Set 3 posted on web

Lecture 11 (October 7).
Risk Aversion
Insurance
Investment in Risky Asset I

Lecture 12 (October 12).
Investment in Risky Asset II
Measures of Risk Aversion
Time consistency (and not)
Application to health clubs I

Producers

Lecture 13 (October 14).
Production Functions (Ch. 11)
Isoquants
Returns to Scale
Costs (Ch. 12)
2-Step Cost Minimization
Problem Set 3 due in class

Lecture 14 (October 19).
Isoquants II
Cost Minimization: Example
Total, Average, Marginal Costs
Supply Function
Problem Set 4 posted on web

Lecture 15 (October 21).
Geometry of Cost Curves II
Short-run and long-run costs
One-Step Profit Maximization (Ch. 13)

Lecture 16 (October 26).
Perfect Competition
Aggregation
Market Equilibrium (Ch. 14)
Comparative Statics of Equilibrium
Problem Set 4 due in class

No lecture (October 28).
2nd Midterm

Lecture 17 (November 2).
Taxes
Long-run Market Equilibrium

Lecture 18 (November 4).
Welfare
Monopoly (Ch. 18)
Problem Set 5 posted on web

Lecture 19 (November 9).
Monopoly (Ch. 18)
Price Discrimination

No lecture (November 11). *Veterans Day Holiday*

Market Interaction

Lecture 20 (November 16).
- Price Discrimination
- Game theory

Lecture 21 (November 18).
- Game Theory

Lecture 22 (November 23).
- Game Theory
- Dynamic Games
- Problem Set 5 due in class

No lecture (November 25). *Thanksgiving Holiday*

Lecture 23 (November 30).
- Oligopoly
- Game Theory and Oligopoly
- Bertrand vs. Cournot competition

Lecture 24 (December 2).
- General Equilibrium
- Edgeworth Box
- Problem Set 6 posted on web

Lecture 25 (December 7).
- General Equilibrium
- Topics

Lecture 26 (December 9) – Last lecture!
- Topics
- Conclusion
- Problem Set 6 due on December 14

Final exam (Thursday December 16, 5-8pm)