

Washington & Lee University
Economics 210
Intermediate Microeconomic Theory
Winter, 2012

Instructor: Joseph Guse

Contact: HH114, 463-8915, gusej@wlul.edu

Course website: home.wlu.edu/~gusej/econ210

Office Hours: Mondays 2-4, Wednesdays 9-11

Prerequisites: Differential Calculus and Introductory Microeconomics.

Time and Location:

Section 01: TR, 11:50-1:15, Huntley 321

Section 02: TR, 3:00-4:25, Huntley 235

1. COURSE DESCRIPTION

Microeconomics is the study of individual economic agents such as households and firms. This course will be largely concerned with models of behaviour - that is ways of thinking about how economic agents make decisions and interact with one another. A model is a simplified formal representation of a more complex system. Good models are built to be as simple as possible while still preserving some essential set of relationships from the system they represent. One advantage of working with formal (“mathematical”) models is that assumptions are kept explicit and are therefore always subject to question. At the end of this course, you should gain a healthy skepticism of both over-dependence and under-dependence on formal models in the general discourse. If you are majoring in business, economics or another social science such as political science, this course will have direct value as you go on to employ variations of these models in your respective fields.

2. LEARNING OBJECTIVES

The standard approach economists take to understanding human behavior is to imagine that individuals have a clear set of choices and are constantly searching for the best available choice that meets their objective - whatever that may be. The core of this course consists of three simple individual-agent optimization problems as well as their composition into models of market behavior. Here is the minimum of what you should know by the end of this course.

- The Consumer’s Problem. Given prices and a fixed amount of wealth or income, what is the optimal combination of goods and services to purchase?
- The Firm’s Profit Maximization Problem. Given a production technology, factor prices, and an output price, how much should a firm produce to maximize profit?
- The Firm’s Cost Minimization Problem. The real problem we imagine firms solving is that of profit maximization, so why even think about cost minimization?
- Partial Market Equilibrium. You will understand how optimizing consumers and profit-maximizing firms determine prices and the distribution of surplus in a competitive market.
- Market Failure. Ideal perfectly competitive markets, of course, do not exist. Markets can fail for any number of reasons. Monopoly and externalities are two. Other sources of market failure such as asymmetric information will be studied as time allows.

3. TEXT BOOKS

- **Primary.** I will assign readings mainly from Hal Varian's *Intermediate Microeconomics*. Any edition 4th or later is fine.
- **Strongly Recommended.** *Workouts in Microeconomics* by Bergstrom and Varian.
- **Secondary.** Perloff's *Microeconomics*. McAfee *Introduction to Economic Analysis*.

4. GRADING

Your grade for the course will be based on the following weights.

- Homework Assignments (10%). You are encouraged to form study groups and work together on the homework assignments. However each student must turn in their own write-up. Homeworks will be graded for effort and completion - not necessarily accuracy. You will be responsible for checking the accuracy of your analysis against the answer keys. (See "Homework Advice and Style Guide" below.)
- Quizzes (20%). I will frequently give short unannounced in-class quizzes based on the day's reading or previous lectures. Everyone gets a free pass to drop their worst quiz score from my grade tally. If you are forced to miss more than one quiz due to an unavoidable university-sanctioned absence or severe illness, please let me know.
- Participation(10%). Participation in classroom discussion and office hours.
- Exams (60%). Exams will be based on the readings, lectures and homeworks. A midterm will be offered during the evening of Monday Feb 27. (Exact time and location TBA) The final exam will be administered through the Williams School during exam week.

5. HOMEWORK ADVICE AND STYLE GUIDE

Homework assignments count for a nearly trivial portion of your final grade (10%). However, mastering the material in the problem sets is the best way to do well on exams which count for the bulk of your grade (60%). Here is a suggested procedure for getting them done in a way that prepares you for the exams and, more importantly, results in long-term retention of the economic concepts.

- (1) As soon as a new homework is posted, start working on it. Make an attempt, on your own, on each problem.
- (2) Get together with your study partners and try to hash out complete solutions through dialogue and reconciliation of your various attempts.
- (3) Remaining sources of confusion should be addressed in office hours - either come in yourself or send a representative from your study group.
- (4) If necessary, reconvene with your study group and finalize your solutions. Do not simply copy each others' answers in these study group sessions; you should be teaching each other the economic theory behind your solution. If you cannot explain your answer to your group, you don't fully understand it. Meet in a room that has a chalk board (or white board). The library and Holecamp have some rooms specifically dedicated to group study.
- (5) Write up your own version to turn in.
- (6) Once the answer key is posted, reconcile your work with it.

You should expect the total time commitment for one problem set to be 4-8 hours depending on how easily the material comes to you.

5.1. The Check-Plus Standard. FOR ALL PROBLEMS: Your work should stand alone as an (easily readable) document illustrating economic theory. As a practical matter, this will usually involve writing at least one or two complete sentences of explanation for each problem along with some well-labeled diagrams. I don't want long essays, but I do want to be convinced that you truly understand your answers (whether they are correct or not).

- Every problem is answered.
- Every solution is explained.
- Every diagram is well-labeled.

Some Useful Analogies:

- Imagine that I am your boss and have asked to prepare a report on the question of the week. I will be presenting your report to our funding agency, but you will not be at the presentation to explain your answers.
- Imagine (similar to above) that I am congressman assigned to the subcommittee on economic theory. You are on my staff who must explain things for me in a brief report so I don't look like an idiot at the next committee meeting.
- Imagine that you work at a consulting firm and I am your client. Pretend that you are concerned about my future business which depends on the quality of your report.
- Imagine that your parents (or whoever pays your tuition) have asked for a sample of your work to show that they are getting their money's worth.
- Imagine no countries, no religion, no greed...Hold on; that's another discussion.
- If you are not sure what I mean by "explain" or "well-labeled", I've tried to write up a more complete style guide...

5.2. Solution Style Guide. Your goal when writing up a solution to a problem should be to convince your reader that your answer is correct, provide them with a clear explanation of how you found it and tell them why it may be interesting. Explain; Illustrate; Interpret.

- **Explain.** This is where you tell the reader where your answer came from and how you found it. A big part of explaining is the "set-up". This usually involves re-stating the question and key assumptions as well as laying out your strategy for deriving the solution. Explaining also requires that you "show your work". Non-trivial logical steps should be written out. I don't expect equations to be re-written after every single logical operation, but at a minimum you need to show the starting point, and say a word or two about how you got from there to here. For example you might begin by saying, "By definition, the budget line equation is

$$p_1x_1 + p_2x_2 = m$$

Subtracting p_1x_1 and dividing by p_2 , this equation may be written as

$$x_2 = \frac{m - p_1x_1}{p_2}$$

..."

- **Illustrate.** Drawing a picture or giving an example is not always necessary, but can often go along way toward clarity. The 2-axis diagram is so common it deserves a special set of style guidelines:
 - *Title.* Write a brief descriptive title or caption above or below your diagram (e.g. “Judy’s Budget Reacting to the Price of Apples”). Your title (along with a caption if necessary) should briefly answer the question “What are we looking at in this diagram?” This is especially important if your answer has more than one diagram.
 - *Label Axes.* What is being measured on each axis? In what units? linear or log scale? On an exam, a diagram without labeled axes runs a high risk of getting zero points unless you have made clear in some other way what space is being represented in your diagram.
 - *Label Graphs.* If you have more than one graph (line, curve, demarcated area, etc) in your diagram, you must indicate which graph is which somehow. Also, it is probably not a good idea to put more than 3 graphs in the same diagram, though this is not a hard and fast rule. You may also want to consider using different colors in addition to labels or making a key if you have multiple graphs. Finally it should go without saying, but if you have multiple graphs in the same 2-axis diagram, each graph should be capable of living in the space defined by the axes. For example, a demand curve is a set of quantity-price pairs, while a budget line is a set of quantity-quantity pairs. They obviously cannot be represented in the same space.
 - *Annotate.* Interesting graph features should be labeled. Uninteresting points should NOT be labeled. This determination is a bit subjective, but in general, if it is directly relevant to your answer, label it. Discontinuities, kink points, intercepts, changes in the sign of the slope and intersections stand a good chance of being interesting - though again this is not a hard rule. Remember, your picture should clearly illustrate your point with as little clutter as possible.
 - *Discuss it.* Refer to your diagram in the explanation and interpretation of your answer. Say a word or two about the special features that you labeled.
- **Interpret.** This is what you say about your answer or solution after you have found it. What does it mean? Why is it interesting? Not every problem will require any or much of this, but if you’re answer does have interesting implications, be sure to point them out.

6. SCHEDULE OF TOPICS

The following is a tentative list of topics we will do our best to cover in lecture. Please read the corresponding chapter **before** coming to class. (Vxx = Varian Chapter xx - Seventh Edition; if you have different edition, go by the chapter titles not the numbers.)

Week of	Tuesday Topic	Thursday Topic
Jan 10	Budget Sets V2	Preferences V3
Jan 17	Utility V4	MEET SATURDAY 10am Choice V5
Jan 24	Demand V6	Slutsky Eqn. V8
Jan 31	Buying Selling V9	Time V10,[11]
Feb 7	Uncertainty V12,[13]	Consumer Surplus V14
Feb 14	Technology V18	Midterm Review
Feb 21	FEB	BREAK
Feb 28	Profit V19	Cost V20,21
Mar 6	Supply V22, 23	Mkt Demand V15
Mar 13	Equilibrium V16	Market Interventions
Mar 20	Monopoly V24,25	Oligopoly V26
Mar 27	Auctions V17	Externalities V34
Apr 3	Public Goods V36	Assymmetric Information V37
Apr 10	EXAM	WEEK