Econ 3303 Fall 2014
Intermediate Microeconomics R Claycombe

Texts: Landsburg, Price Theory and Applications, 9th ed.
Soper, Mathematics for Economics and Business, 2nd edition

This class meets and extra half hour on Wednesday; from 8:40 to 10:10 in section 01 and from 12:40 to 2:10 in section 02. This extra time is used partly to conduct the labs and partly to discuss the problem set (PS) problems. As noted below, the underlined problems will definitely get discussed, be prepared! Others will get attention as time allows. This is the third year that I've done it this way (before I used 4 hours a week). It seems to work..

Also, although you've had enough economics to know what an economics course is like, we have been requested to clearly articulate these matters on our syllabi. This and other economics courses are clearly intended to develop your critical thinking and problem solving skills by way of asking you to learn about the economic way of thinking. The reading in the text and the lecture in class gives you the foundation material while the problems and labs give you an opportunity to apply the concepts. Make the most of it!

Syllabus

Week	Dates	Text Reading	Problems and Labs
1	Aug. 25- 29	Lands Introduction Lands, Chap 1 Soper, 2.1-2.8***	Lab 1(Introduction)* **N1, N2, N3****, PS 4,8, 31 2.7, 2.9
2	Sept 1 - 5 (Labor Day off)	Lands, Chap 2 Soper, 2.9-2.14	**N1**, PS 10, 11, 14, 15 2.15
3	Sept 8 - 12	Lands, Chap 3 (Appendix included) Soper, Chaps. 5, 6, 7	**N1(a,b)**, PS 10, 37 5.19, 5.20, 6.3, 6.4, 7.1, 7.2, 7.7 **Hand in #1, #2**
4	Sept 15 - 19	Lands, Chap 4 Soper, Chap. 8	PS 2, 14, 30 8.8, 8.9, 8.11 **Hand in #3**
5	Sept 22– 26	Exam Lands Chap 5	 PS 1, 2, 8
6	Sept 29 - Oct 3	Lands Chap 6	**N1**, PS 12
7	Oct 6 - 10	Lands Chap 7	**N7**, PS 5, 7, 20
8	Oct 15 - 17 (Fall Break)	Lands Chap 8	PS 1, 4, 9, 20, 32, 38
9	Oct 20 - 24	 Lands Chap 8	Lab 2 (Entry/Exit)
10	Oct 27 - 31	Review of Old Exams Exam Lands Chap 9	 PS 4, 9, 16, 17

11	Nov 3 - 7	Lands, Chap 10	**N1, N2**, PS 8, 18, 22, 34
12	Nov 10 - 14	Soper, Chap. 10	Lab 3 (Monopoly) 10.3, 10.8 **Hand in #4**
13	Nov 17 - 21	Lands Chap 11	R 5, 6, 7, 11; PS 11, 13, 14 Lab 4 (Oligopoly)
14	Nov 24 - 25 (Thanksgiving)	Lands Chap 15	PS 1, 2, 8, 9
15	Dec 1 - 5	Lands Chap 15 Lands Chap 16.1 Lands Chap 17.3	

* "Lab" refers to computer simulations that we will have in the Windows Lab in Lewis Hall. There is a lab report due for each lab, 2 to 4, each of which counts as part of your final grade as indicated below. Each lab will focus on a topic that we have just studied. Your task will be to apply that knowledge. In each instance, you run a business and will be coached during the lab to choose price and production levels as market conditions dictate. Your lab report should include:

1) a narrative description of what happened to the market in general
2) an analysis of what happened to your firm
3) what you could have done to improve the performance of your firm.
4) hard copy of your printouts from the lab

This will be easier if you take some notes during the simulation. Anything that pertains to items 1-3 would be noteworthy. You will also need to review the printouts that you save for specific figures.

** Numerical exercises in Landsburg are to be handed in. They are typed in large bold face. The due dates will be established as we go. Collaborative work is permitted on homework, but the final product should not appear as if it was copied from another paper. If I feel that your work is not sufficiently independent, I will give you one warning. The problem set exercises in Landsburg are also good, a few of which are designated as worthy of special attention. The one in each chapter that is underlined will be discussed in class, so prepare to participate in that. We probably won't have time to go over the others in class but there may well be test questions that resemble them. Ask me about them in the office if you like.

*** The problems in Soper all have complete answers provided. This facilitates independent work, but not hand-in assignments. Be sure that you can work the ones that I've listed. For hand-in work, I have supplied other problems, which are attached and will be referred to as Hand in #1, etc.

Grade Weights:	
First Lab Report (Lab 2)	4%
Second Lab Report (Lab 3)	5%
Third Lab Report (Lab 4)	6%
First and Second Exams	20% each
Final	30%
Class Participation and Hand-in Work	15%

Hand In #1

1. Explain the material quoted below, which originally appeared in an article by J. R. Hicks in Econometrica in 1935. It was reprinted in Readings in Price Theory, edited by George J. Stigler and Kenneth E. Boulding, p. 363 and further reproduced here from Allen, Elementary Mathematics of Price Theory (a text used at WMC for thirty years until it went out of print in 1995):

"If the prices at which the monopolist hires his factors are fixed, his cost of production can be taken as a simple function of output. Let F(x) be the total cost of producing an output of x.
"If the monopolist's selling price is p, and p = f(x) is the demand curve confronting him, his profit on selling output x will be

$$xf(x) - F(x)$$

which is maximized when

$$xf'(x) + f(x) = F'(x).$$

"So much has been familiar since Cournot; the principle recent innovation has been to give the expression on the left of the last equation a name, Marginal Revenue. The equation can then be written

Marginal Revenue = Marginal Cost

which is certainly a convenient way of expressing the first condition of monopolistic equilibrium."

2. Explain the following analysis from Joan Robinson, The Economics of Imperfect Competition, p. 136:

"If A is the average cost, M the marginal cost, and O the output

$$M = \frac{d(AO)}{dO}$$

$$= A + O\left(\frac{dA}{dO}\right)$$

$$M - A = O\left(\frac{dA}{dO}\right)$$

which is the increase in the cost of the old output, O, when output is increased by one unit."

Hand In #2

1. Given the function $f(x) = y = -0.2x^2 + 1.6x + 6$

(a) Determine the x-value at which the function is at a maximum or minimum.
(b) Is it a maximum or minimum?

2. Given the total revenue function

$$R = f(x) = y = 12x - 2x^2$$

and the total cost function

$$C = F(x) = y = x^3 - 4x^2 + 8x + 4$$

(a) What is the total profit function?
(b) At what output is profit at a maximum?
(c) Check by setting R' equal to C' and solving for x.
(d) Plot on the same chart Total Cost, Tota Revenue, Total Profit, Marginal Cost, and Marginal Revenue.

Hand In #3

Utility Problem

Here is a set of information similar to that which we had in class to solve for an optimal mix of goods.

$$U = X^2 Y^3$$

$$I = 100 = 2Y + 3X$$

Solve for the utility maximizing levels of X and Y.

Hand-in # 4
A review problem that includes a bit of integration.
Given:

marginal cost = MC = $3x^2 - 8x + 8$
fixed cost = FC = 4,
marginal revenue = MR = 12 - 4x.

Find:

1. TC;
2. ATC;
3. VC;
4. AVC;
5. AFC;
6. TR;
7. AR;
8. profit
9. output where AVC is at a minimum;
10. output where TR is at a maximum;
11. output where MC is at a minimum;
12. output where TC is at a point of inflection'
13. most profitable output;
14. elasticity of AR at the most profitable output;
15. elasticity of MC at the most profitable output.