Econ 110: Introduction to Economic Theory

2nd Class   **1/24/11**

[show plug for taking economics in college by Mankiw in the NYTimes:
http://www.nytimes.com/2010/09/05/business/economy/05view.html?scp=1&sq=Mankiw&st=cse]

some further amplification on the course structure:
-- I will drop little ideas in the classes about what else to practice. Really you want to work on your problem-solving skills and on understanding the diagrams and equations presented in class by manipulating them. Hence I will give out practice problems on many days (starting today) and go over the answers to them at the beginning of the following class. If you want to understand the course material, try to do these problems on your own before the next class. If you understand these problems inside and out you will come to see how to think about these problems, and how to analyze economic problems.
--the practice problems and problem sets are key for understanding how economic analysis works. Economics is like a long series of word problems. Not my favorite thing in high school, but that's the way to do this type of analysis. Before tests I will also give out practice problems. More importantly, do the ones I hand out on your own rather than just waiting to see what the answers are.
--the tests will have some problem-solving but also some short-answer type stuff to see if you can write about what we're doing and see the bigger points under the word problems.

Why have economic theory at all?
need to come up with both a descriptive and a prescriptive response to the fact that there is scarcity, i.e., that wants outstrip resources.
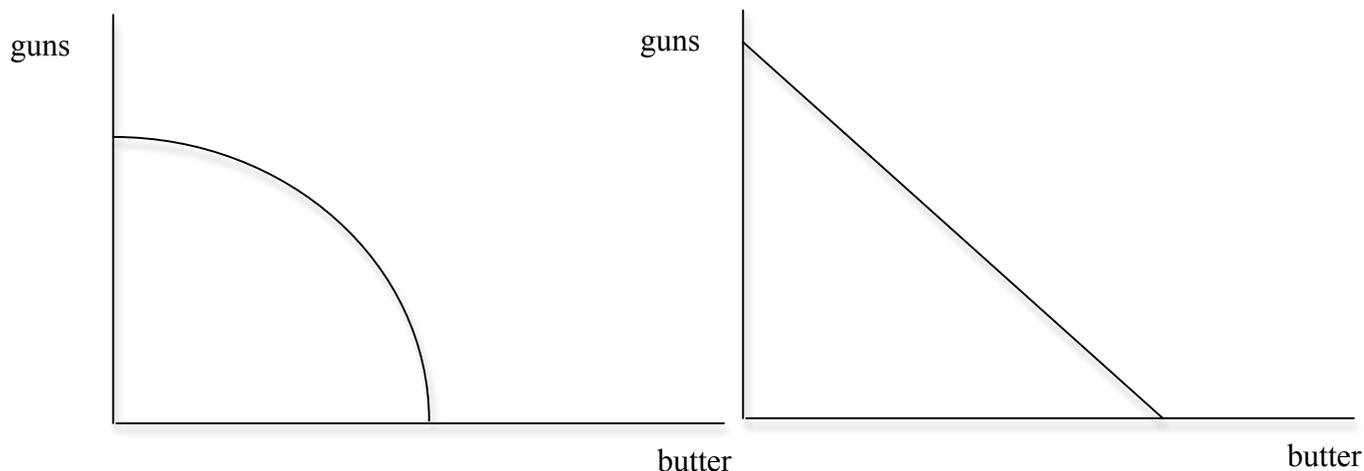
scarcity
leads to tradeoffs
and basic concept in economics of opportunity cost
(give examples; e.g. coming to class as opposed to your next best use of time; study vs. sleep)

production possibility frontier (PPF)
--draw generic one, discuss labeling of axes, discuss points on the axes, discuss shape of PPF
(contrast straight line to curve)

guns

guns

butter

butter

--note it is convex (discuss strictly vs. nonstrictly); why not ever concave? discuss

--curve implies diminishing marginal returns

--the slope of the PPF is the marginal rate of transformation

--in order to write down the equation for the PPF (and calculate its slope), need to know the total amount of the input (e.g., labor) and the production functions for the two goods on the axes

--consider construction of a PPF from two people (and extend conceptually to many people)

--consider points below (inefficient), on (efficient), and above (unattainable) the PPF

--can be for one person, for a firm, for a whole society, for the world

--growth shown as outward shift of PPF

how, what, and for whom

notice in this case we assumed they knew how to make stuff and we just assigned the person who was better at one thing to make it first

note what we don't learn from this is which point to pick on the PPF, just that points on it are preferred on efficiency grounds to points below it

efficiency and equity—we also don't know, when a point is picked on the PPF, who actually gets what share of the output.

pick up problem sheet on your way out if you didn't already get one; in general note that handouts will be on the table at the rear each day; problems are included with lecture notes and answers are included with lecture notes for the next class

Practice Problems 1/24/11

I. A factory has 400 labor hours (L) to allocate between two production processes,
   beer (B) and pretzels (P), so:

$$L_B + L_P = 400$$

B and P are made using the following production functions:

$$B = \sqrt{L_B}$$

$$P = 2\sqrt{L_P}$$

1) What is the maximum possible production of B?
   What is the maximum possible production of P?

2) What is the equation for the production possibility frontier (PPF)?
   Write it in the form B = f(P)

3) Sketch the PPF with B on the vertical axis and P on the horizontal axis.

4) What is the marginal rate of transformation (MRT), $\dfrac{dB}{dP}$?

II. Angie and John each run their own businesses creating problems (P) and essay
    questions (E) for economics professors to use on their tests. In one hour of work,
    Angie and John can produce at the following rates:

        Angie: 5P or 2E

        John: 2P or 1E

1) Sketch the (hourly) PPF for Angie (with P on the vertical axis and E on the horizontal
   axis) and write down the equation for her PPF. Do the same for John.

2) What is Angie's MRT? What is John's?

3) Angie and John decide to combine into a single business. Sketch the PPF for their
   business (i.e., the PPF per hour in their business's workday).