Econ 100B: Microeconomic Theory
Winter 2011
Class Information

Read the syllabus and check out the FAQ!

- **Web**: [http://econ.ucsb.edu/~grossman/Econ100BW11](http://econ.ucsb.edu/~grossman/Econ100BW11)
- **Instructor**: Zack Grossman: grossman[at]econ.ucsb.edu
- **Office hours**:
  - Friday, 1:30 - 2:50pm, GIRV 1115 (drop-in)
  - Tuesday, 1:45 - 2:15, NH 3049 (by appointment)
- **Materials**:
  1. *Intermediate Microeconomics* (7th or 8th ed.) by Hal Varian
  2. *Workouts in Intermediate Economics* by Ted Bergstrom and Hal Varian *(recommended)*
  3. iClicker
- **Waitlist**: [https://waitlist.ucsb.edu/](https://waitlist.ucsb.edu/)
Exams & Grading

- Midterm 1 (20%): January 25, in class
- Midterm 2 (20%): February 17, in class
- Final (50%): Tues., March 15 (here)

- Diagnostic quizzes (in section), section participation (5%): see syllabus for dates, first one next week!
- Clicker questions (5%): about 2/day, .25 pts. for participation and .25 pts. for accuracy each week
Recipe for Success

- Attend the class, participate in clicker questions, and ask questions that will help you understand better
- Do practice problems
- Attend and participate in section
- Come to office hours whenever you have questions, and do not wait until a week before an exam
<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>OH</th>
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<tbody>
<tr>
<td>Greg Leo</td>
<td>gleo[@]umail</td>
<td>TR 2-3, PHELP 1420</td>
</tr>
<tr>
<td>Dan Saunders</td>
<td>saunders[@]econ</td>
<td>R 9-11, HSSB 1237</td>
</tr>
<tr>
<td>Rish Singhania</td>
<td>hs[@]econ</td>
<td>F 5-7, PHELP 1448</td>
</tr>
<tr>
<td>Anand Shukla</td>
<td>ajshukla[@]umail</td>
<td>F 12:30-2:30, TD-W 2600</td>
</tr>
<tr>
<td>Rebecca Toseland</td>
<td>toseland[@]econ</td>
<td>M 4-6, HSSB 2251</td>
</tr>
<tr>
<td>Kevin Welding</td>
<td>welding[@]econ</td>
<td>M 9-11, 434 0121</td>
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Important Skills

To succeed in this class, you should be comfortable with

- Solving 100A-style utility-maximization problems
- Simplifying algebraic expressions
- Solving linear equations
- Solving systems of 2 equations with 2 variables
- Taking basic derivatives
Econ 100A vs. Econ 100B

- Things you studied in Econ 100A
  - An individual’s consumption decision
  - A firm’s production decision

- What you will study in Econ 100B
  - Trade between consumers and producers in markets
  - Requires: aggregating behavior of many consumers, producers
In the news: health care reform

Some major provisions of ACA of 2009:

- Individuals can purchase insurance on state-based “exchanges”
- Can’t deny coverage for pre-existing conditions
- Everyone will have to buy insurance or pay a $695 annual fine.
- Funded by Medicare Payroll tax and tax on high-end insurance plans

Various provisions take effect over the next several years.
Regulation: Good or Bad?

Do/did we need more regulation of the health industry?

Clicker Vote

- A) We need more regulation
- B) We need less regulation
- C) Don’t know
- D) It’s complicated

This is an economic question... how do economists think about it?
Aside: Why do we use clickers?

- They give me feedback on your level of understanding
- They give you feedback on your level of understanding
- Encourages you to engage mentally
- Give you a chance to practice skills
- Gives you a chance to answer honestly in a safe environment
- Give you a chance to express your opinion
Regulation: How do economists think about it?

Before we can answer big questions about complicated problems, we need a basic theoretical framework to guide our analysis.

Let’s rephrase the question:

- Under what conditions is government regulation of markets unnecessary/harmful?
- When is it needed/helpful?
- What kind of regulation is helpful and why/how?

More generally, what are markets supposed to do?

Under what conditions do they perform well and under what conditions do they fail?

Before we can answer big questions about complicated problems, we need a basic theoretical framework to guide our analysis.
Your goals for this course

- Understand basic theoretical framework we use to think about
  - If/how/when markets do & don’t “work”
  - What happens when they don’t & what are the effects of policy responses
- Develop analytic tools you can apply to specific economic questions, for example:
  - How is the price of health care/insurance determined?
  - Does the market provide insurance for enough people on its own?
  - How will health care reform, e.g. the taxation of employer provided health benefits affect the labor market? Who bears the cost—employers or employees?
  - How can we save money by insuring more people?
  - What can we do to lower health care costs?
  - Why doesn’t the market find a way to achieve cost-savings without government intervention?
Structure

- Equilibrium in well-functioning (competitive) markets (∼ 1/3)

- Market failure (∼ 2/3)
  - Monopoly & oligopoly
  - Externalities (missing markets)
  - Public goods
  - Imperfect/Asymmetric Information (covered in Econ 100C)

- Today and Thursday:
  - Whirlwind recap of Econ 100A
  - Uncertainty
Key questions from 100a

How do we think about rational choice?

- Utility function represent preferences
- Limited resources: budget imposes constraint
- Maximize utility subject to constraint.
Utility Functions

Example: Cobb-Douglas

- Utility function:
  \[ U(c_1, c_2) = c_1^\alpha c_2^{1-\alpha} \]

- Indifference curves:
Utility Functions

Example: perfect substitutes

- Utility function:

\[ U(c_1, c_2) = c_1 + c_2 \]

- Indifference curves:
Utility Functions

Example: perfect complements

- Utility function:

\[ U(c_1, c_2) = \min(c_1, c_2) \]

- Indifference curves:
Budget Constraint

- The budget constraint represents the frontier of consumption bundles affordable with income $m$.
- Equation:
  \[ p_1 c_1 + p_2 c_2 = m \]
- Graphically:
Rational Choice

- How does the consumer choose?
- The consumer chooses an affordable bundle to maximize utility:
  \[
  \max_{(c_1, c_2)} U(c_1, c_2)
  \]
  subject to
  \[
  p_1 c_1 + p_2 c_2 = m
  \]
- Solution: demand is \( c_1 = D_1(p_1, p_2, m) \) and \( c_2 = D_2(p_1, p_2, m) \).
Choice: Graphical Illustration

The consumer will choose a bundle where

- Algebraically:

\[ MRS = \text{price-ratio} \implies \frac{MU_1}{MU_2} = \frac{p_1}{p_2} \]

- Graphically:
Recall from Econ 100A: A person is choosing between two goods, $x_1$ and $x_2$, with $U(x_1, x_2) = x_1x_2^2$. Her income is $m = 12$ and the prices are $p_1 = 2$ and $p_2 = 1$, respectively. Which of these is false?

- A) $|MRS| = \frac{x_2}{2x_1}$
- B) The budget constraint is $2x_1 + x_2 = 12$
- C) At the optimum, $\frac{x_2}{2x_1} = \frac{1}{2}$
- D) $(x_1^*, x_2^*) = (2, 8)$
Clicker Vote

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Recurring Theme

We use this approach repeatedly

• Individual choosing consumption bundle
• Firm choosing production bundle (minimizes cost)
• Individual choosing consumption over time
• Now: choosing consumption when the future is uncertain
Uncertainty about what?

- Behavior of others, future prices, wealth
- Disasters: Will my house burn down? Earthquake?
- Will the economy recover by next year? Will I find a job? Will my customers return?
- Will I get cancer? What a car hits me and I break my leg?
Today and Thursday

- How do economists think about uncertainty?
  - Using the same set of tools: constrained optimization
  - Expected utility theory

- What are rational responses to uncertainty?
  - A portfolio of contingent consumption goods
  - Buying insurance
States of Nature and Contingent Plans

- **States of Nature:**
  - “car accident breaks leg” (a) vs. “no accident” (na)
  - Probability of: accident $= \pi_a$, no accident $= \pi_{na}$; $\pi_a + \pi_{na} = 1$
  - Accident causes loss of $L$

- **Contingent Plan:**
  - A state-contingent consumption plan: consumption level/bundle is different in each state (e.g. vacation only if no accident)
  - Contracts may be state-contingent (e.g. insurer pays only if there is a accident)
Next time

- State-contingent budget-constraints
- Preferences under uncertainty
- Insurance
- Diversification