Econ 100B: Microeconomic Theory
Winter 2011
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
## Teaching Assistants

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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 w/ 2 variables
- Taking basic derivatives
Econ 100A vs. Econ 100 B

- 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?
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
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?
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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
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• Understand basic theoretical framework we use to think about
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  • 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)
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- 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:

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

Example: perfect substitutes

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Example: perfect complements

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- Indifference curves:
Budget Constraint

- The budget constraint represents the frontier of consumption bundles affordable with income $m$
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- Graphically:
Rational Choice

• How does the consumer choose?
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

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Rational Choice

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- The consumer chooses an affordable bundle to maximize utility:
  \[
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  \]
  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:

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

Recall from Econ 100A: A person is choosing between two goods, $x_1$ and $x_2$, with $U(x_1, x_2) = x_1 x_2^2$. Her income is $m = 12$ and the prices are $p_1 = 2$ and $p_2 = 1$, respectively. Which of these statements 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) $(x_1^*, x_2^*) = (2, 8)$
How well do you remember utility maximization?

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
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?

- What are rational responses to uncertainty?
Today and Thursday

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

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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 $L$
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  - “car accident breaks leg” (a) vs. “no accident” (na)
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• 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