9/24/2019

Econ 401a: Microeconomic Theory
Fall 2019

Professors: Simon Board and Moritz Meyer-ter-Vehn
Emails: sboard@econ.ucla.edu and mtv@econ.ucla.edu
Class: TR 11:00-12:15am, PA 1246
Office hours: T 3:30-4:30, R 1-2, Bunche 9353 (Board, weeks 1-5), Bunche 9365 (MtV, weeks 6-10)

TA: Lu Liu,
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Section: T 1:00-1:50pm PA 1337, T 2-2:50 Royce 190.
Office hours: R 3-5pm, Alper Room

Overview

This class teaches students about the building blocks of economics, from consumer theory to game theory, and the mathematical tools that underlie them. Additionally, we seek to connect these concepts to practical applications, enabling students to reason through practical problems through the lens of formal microeconomic models. This class emphasizes understanding and applying concepts rather than memorizing.

We will use Jehle and Reny, "Advanced Microeconomic Theory", 3rd Edition, 2011.

We will also provide lecture notes. These are not supposed to supplant the textbook, but rather illustrate what we view as most important.

Evaluation

The evaluation consists of four parts.

1. Three homework assignments [10% each].
   - Homeworks consist of mathematical problems to ensure students understand the formal concepts being introduced in class.
   - Students are allowed to discuss problems with one another, but solutions must be written up individually.
   - These will be due on Thu Oct 17 (Week 3), Thu Nov7 (Week 6) and Tue Dec 3 (Week 10).

2. Midterm [10%]
   - Thu, October 31st, in class

- Students can bring in 5 single-sided pages of notes.

2. Final [50%]
- Fri, December 13th, 3-6pm
- Covers all the material from the class.
- Students can bring in 10 single-sided pages of notes.

4. Micro-presentation [10%]
- Two 3-min presentations on different applications
- Students present in randomly chosen pairs.
- Students should hand in a one-page synopsis answering: What is interesting? What does it teach us?
- The list of speakers and topics can be found here: https://bit.ly/2lMlKEp

Important dates:
- Thu Oct 17 (Week 3): HW 1 due
- Thu Oct 31 (Week 5): Midterm
- Thu Nov 7 (Week 6): HW2 due
- Thu Nov 28 (Week 9): Thanksgiving
- Tue Dec 3 (Week 10): HW3 due
- Fri Dec 13 (Week 11): Final

Mathematical preparation. You can learn the math in this class as we go along. There are lots of online resources. The appendix to JR is very good, although it's more comprehensive that we'll need, so don't worry if it looks intimidating! We'll touch on the following topics:
- Open, closed and bounded sets, Continuity, Extreme value theorem, Fixed point theorem. JR A1.3
- Monotone, Concave, quasi-concave functions. JR A1.4.
- Derivatives. JR A2.1.
- Unconstrained optimization. JR A2.2
- Constrained optimization. JR A2.3.
- Theorem of the Maximum, Envelope Theorem. JR A2.4.

Topics

(i) Consumers [6 lectures]
- Preferences. JR 1.2.
- Utility maximization, Demand. JR 1.3-1.4.
- Expenditure minimization, income and substitution effects. JR 1.4-1.5.

- Endowments, Labor supply, Choice over time. Notes.
- Revealed preference. JR 2.3.
- Expected utility, risk and insurance, portfolio choice. JR 2.4.

(ii) Firms [3 lectures]

- Technology. JR 3.2.
- Cost minimization. JR 3.3.
- Competition: Profit maximization, Supply. JR 3.5
- Monopoly problem, price discrimination. JR 4.2.

(iii) Equilibrium [5 lectures]

- Partial equilibrium: Supply and Demand. JR 4.1.
- Consumer surplus, Efficiency. JR 4.3.
- Application: Taxes, Asset pricing, equity premium puzzle. Notes.
- General equilibrium. JR 5.1.
- Existence, Welfare theorems. JR 5.2.
- Public goods, Externalities. Notes.

(iv) Strategy [5 lectures]

- Dominant strategies. Nash Equilibrium, Bayesian Nash Equilibrium. JR 7.2
- Applications: Cournot, Bertrand, Auctions, Reputation. JR Ch 4.2, 9.2.
- Subgame Perfect Nash Equilibrium, Perfect Bayesian Equilibrium. JR 7.3.
- Applications: Entry games, Stackelberg, Signaling. JR 8.1.