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Course Syllabus ECN 501B: Microeconomics (Markets)

Course Content and Objectives: This course is one of the core Ph.D. Microeconomics classes. It is one of a series of courses meant to train you in the tools and canon of Economics.

In this course, we will focus on two types of markets: Matching and General Equilibrium. Matching Markets are best thought of as thin markets in which only certain agents can interact. For instance, in the context of labor matching markets, firms can hire workers; they cannot hire other firms. General Equilibrium effectively allows an agent to be a buyer at some price and a seller at another price. It is an elegant theory with powerful normative conclusions. But, the elegance and power often come at the cost of stringent assumptions about technology, preferences, and agents' expectations.

Plan of the Term: We will spend roughly seven weeks on Matching and seven weeks on General Equilibrium.

Part 1. Matching Markets

1. One-to-One Matching
 - Stability: Definition and Existence
 - Efficiency, Optimality and Other Normative Criteria
 - Revisiting Stability: Core
2. Many-to-One Matching
 - Pairwise Stability, Stability, and the Core
 - Converting into One-to-One Problem
3. Designing Stable Matching Mechanisms
4. One-Sided Matching Markets
5. Transferable vs. Non-Transferable Utility
 - Efficiency vs. Stability: Sorting
 - Loss in Welfare under Stability
 - Rationalizing the Data
6. Applications with Monetary Transfers
 - Shapley-Scarf

- Kelso-Crawford

Part 2. General Equilibrium

1. Introduction to General Equilibrium: Partial Equilibrium
2. GE in a Pure Exchange Economy: Edgeworth Box
3. Welfare Theorems
4. Externalities and Public Goods
5. Existence of Competitive Equilibrium
 - Pure Exchange Economy
 - With Production
6. Sonnenschein-Mantel-Debreu Theorem
7. Competitive Equilibrium and the Core

Grading Grades will be determined by almost weekly problem sets (20%), a midterm (35%), and a final exam (45%).

- Problem Sets: They will be graded on a five-point scale: (5) indicates perfect or almost perfect solutions; (4) indicates above average work; (3) indicates average work; (2) indicates below average work that is on the right track; (1) indicates seriously flawed solutions. Students that do not hand in a homework will obtain a 0.
- Midterm: In class on Thursday October 18, 2018.
- Final: In the University Scheduled time.

Two logistical grading issues. First, while you may work with classmates on Problem Sets, you must write up the solutions yourself. You cannot copy a classmate's answer verbatim. It is great to learn from your classmates. But, at the same time, learning often involves banging your head against the wall. Thus, you are strongly encouraged to work on the problem set alone, before and after you meet with your classmates.

Second, students that do not hand in a problem set or miss an exam—but do not have an *excused absence*—will get a zero on the problem set or exam. Excused absences will only be granted in extreme circumstances. *Not handing in a problem set is defined as not handing it in by 5pm on the due date.*

Readings: We will draw on different texts for the two parts of the course.

1. Matching: We will mainly rely on material from *Two-Sided Matching: A Study in Game-Theoretic Modeling and Analysis*, by Roth and Sotomayor. In addition, we will supplement the book with several recent articles to be announced in class.
2. General Equilibrium: We will mainly rely on material from *Microeconomic Theory*, by Mas Collé, Whinston, and Green (MWG). While not required, many students find it beneficial to supplement MWG with *Microeconomic Foundations I: Choice and Competitive Markets*, by Kreps.

Disability Statement: At the University of Arizona we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, you are welcome to let me know so that we can discuss options. You are also encouraged to contact Disability Resources (520) 621-3268 to explore reasonable accommodation.

Syllabus: The work, course requirements (including exam dates), described in this syllabus are subject to change at the discretion of the instructor.