

University of Hawaii at Manoa  
Department of Economics

**Microeconomic Theory II**  
**ECON 608, Spring 2009**

(Tentative; subject to change)

TR 10:30-11:45 PM Saunders 515D (The Miller Room)

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**Course Content**

This is the second course of the microeconomic theory sequence. Topics will include general equilibrium analysis, market failure, and foundations of game theory.

**Learning Objectives**

- Master the concepts and the tools of microeconomic theory that are essential for understanding research in major general-interest economics journals, communicating with other economists, and conducting economic research.
- In particular, learn general equilibrium theory and basic game theory that constitute the backbone of applied economic research in many areas.

**Prerequisites**

Econ 606, Econ 627. Note that Calculus, Linear Algebra, and Intermediate Microeconomics are required for Econ 606. You are assumed to be familiar with concepts and techniques covered by these courses. Students are also expected to take Econ 628.

**Grading**

Problem Sets	30%
Midterms (2)	40% (20% each)
Final Exam (May 14 Thursday, 9:45-11:45)	30%

There will be periodic problem sets. The problem sets will be mostly analytical or calculus intensive. I strongly encourage you to work together on problem sets, but each of you will hand in your own assignment. **If you work in groups, you must acknowledge your collaborators in your solutions to the problem sets.**

**Textbooks**

There are two main textbook: MWG and FT.

Required

Mas-Colell, Andreu, M. Whinston, and J. Green. 1995. Microeconomic theory. (MWG)

Fudenberg, Drew, and J. Tirole. 1992. Game Theory. The MIT Press. (FT)

### Recommended

Varian, Hal. 1992. Microeconomic analysis, 3rd edition.

Kreps, David. 1990. A Course in Microeconomic Theory. Princeton University Press. Chapters 16-18.

Aliprantis, CD., D.J Brown, O. Burkinshaw. 1990. Existence and Optimality of Competitive Equilibria. Springer-Verlag. Chapter 1. (ABB)

Gibbons, R. 1992. Game Theory for Applied Economists. Princeton University Press.

Occasionally I will use handouts to supplement the texts and the lectures.

### **Topics covered**

We will cover topics 1-4 in the following list (and some topics in 5 if we have time).

#### **1. Introduction**

#### **2. General Equilibrium**

The Arrow-Debreu model, existence and uniqueness of equilibrium, the fundamental theorems of welfare economics.

- Pareto Optimality (PO) – normative criterion  
MWG 10.B, 15.A,B, 16.B,E,F; Kreps 5.1-5.4, Varian 17.6, 17.8, 17.9; ABB 1.5.
- Core – the outcome of the pure exchange institution  
MWG 18.A,B; Varian 21.1; ABB 1.5.
- Competitive equilibrium (CE) and its welfare properties – the outcome of the competitive market institution  
MWG 10.B,D, 15, 16; Kreps 6.1-6.3; Varian 17.2-17.3, 17.6-17.7; ABB 1.6.
- Positive Analysis of CE: existence, number of CE, core equivalence  
MWG 17, 18.B; Kreps 6.4, Varian 17.5, 21; ABB 1.5.
- Production Economies and CE  
MWG – everywhere above; Kreps 8.4, Varian 18; ABB 1.7.
- Other issues: time, contingent commodities  
MWG 19-20; Kreps 6.5, Varian 19-20.

#### **3. Market failure**

Externalities and public goods.

Ledyard, John. 1987. Market failure. California Institute of Technology Working paper 623.

- Externalities and market failure  
MWG 11; Kreps 6.3; Varian 24.
- Public goods and market failure  
MWG 11.C; Varian 23.

#### 4. Non-Cooperative Game Theory

Basic elements of game theory, normal form games of complete information, extensive form games, repeated games, games of incomplete information.

- Basic elements of noncooperative game theory. Common knowledge  
MWG, Ch.7; FT 3-6, 77-90, 541-48; Kreps 11
- Normal form games of complete information
  - Dominant strategies and iterated dominance; rationalizability
  - Nash equilibrium in pure and mixed strategies. Nonexistence of pure strategy equilibria. Multiple equilibria, focal points, Pareto optimality. Nash equilibrium as the result of learning and evolution. Existence.
  - Trembling-hand perfection  
MWG 8.A-8.D, 8.F 8.Appendix A; FT 3-53, 351-356; Kreps 12.2, 12.4-12.6
- Extensive form games
  - Sequential rationality, backward induction, subgame perfection. Critique  
MWG 9.A-9.B; FT 67-77; 90-100; Kreps 12.3
  - Extensive form refinements: Weak Perfect Bayesian Equilibrium, Sequential Equilibrium  
MWG 9.C-9.D; Kreps 12.7
- Repeated games
  - Repeated games and folk theorems  
MWG 9.B pp. 279-82; 12.Appendix A, 12.D; FT 110-113, 145-160; Kreps 14.1-14.2, 14.4
  - Bilateral bargaining  
MWG 9.Appendix A; FT 113-117; Kreps 15.3-15.5
- Static games of incomplete information  
MWG 8.E; FT 207-215
- Dynamic games of incomplete information  
FT 319-331, 367-381; Kreps 13

#### 5. Additional topics

- Economics of Information and Incentives
  - Adverse selection, Signaling and Screening.  
MWG 13, Kreps 17, Varian 25.6-25.11
  - Moral hazard and the Principal-Agent Problem.  
MWG 14, Kreps 16, Varian 25.1-25.4
- Social Choice and Welfare. Social Choice and Arrow's Impossibility theorem. Possibility theorems and social welfare functions.  
MWG 21; Kreps 5.
- Incentives and Mechanism Design.  
MWG 23, Kreps 18

#### Disability Access

If you feel you need reasonable accommodations because of the impact of a disability, please: (1) contact the KOKUA Program (V/T) at 956-7511 or 956-7612 in room 013 of the QLCSS (Queen Lili'uokalani DCenter for Student Services); (2) speak with me privately to discuss your specific needs. I will be happy to work with you and the KOKUA Program to meet access needs related to a documented disability.