

UNIVERSITY OF HAWAII AT MANOA
DEPARTMENT OF ECONOMICS

Microeconomic Theory II
Econ 608
Fall Semester, 2003

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Microeconomic Theory II

Course description This is the second of two courses in microeconomic theory. Topics will include general equilibrium analysis, market failure, social choice and welfare, game theory, and information and incentives.

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

Assessment Several assignments and a midterm – 50% of the grade; final exam – 50% of the grade.

RECOMMENDED TEXTS

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

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)

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

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

MWG is the main textbook. Others are supplements to help you learn better. There will be also handouts that I will distribute in class.

TENTATIVE SYLLABUS

(We will cover topics 1-4 and some of the topics 5-8 if time)

1. INTRODUCTION.

2. GENERAL EQUILIBRIUM. The Arrow-Debreu model. The 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. 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

6. SOCIAL CHOICE AND WELFARE. Social Choice and Arrow's Impossibility theorem. Possibility theorems and social welfare functions.

MWG 21; Kreps 5.

7. INCENTIVES AND MECHANISM DESIGN.

MWG 23, Kreps 18

8. APPLICATIONS AND REVIEW.