

Revised 08/22/03

UNIVERSITY OF HAWAII AT MANOA
DEPARTMENT OF ECONOMICS

Economics 606
Microeconomic Theory I

Fall 2003
Lecture: TR 3:00-5:00 PM
Room: BUSAD C101

Teaching Assistant: Ming Liu
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Office Hours: MW 9:00 - 10:30 AM, TR 11:30 AM - 1:30 PM
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Instructor: Gerard "Jerry" Russo
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COURSE DESCRIPTION: This is a first course in partial equilibrium microeconomic analysis. As such, this course focuses on mathematical models of individual economic behavior. Primary emphasis is on the most basic static full-information models. All models will rely on an assumption of either equilibrium or optimization to render soluble form. Topics include: theory of the firm - production, costs, profit maximization, cost minimization and duality; theory of the market - perfect competition, monopoly, oligopoly, and monopolistic competition; and theory of the consumer - preferences, expenditures, utility maximization, expenditure minimization and duality. Additionally, some topics in uncertainty and information theory, including expected-utility theory, moral hazard, and adverse selection will be presented. This course will rely on problem solving as the primary instructional technique.

COURSE OBJECTIVES: The course objectives are threefold: first, to present a rigorous mathematical treatment of fundamental microeconomic theory with emphasis on static partial equilibrium analysis; second, to train students to construct and analyze mathematical models of individual economic agents; and third, to demonstrate the useful application of these models to a wide variety of public policy issues, including but not limited to, regulation, taxation, and insurance. The overall and ultimate objective is to prepare the students for advanced field courses and independent research.

PREREQUISITES: Calculus, Intermediate Microeconomics

CO-REQUISITE: ECON 627.

TEXTS:

Jehle, Geoffrey A., and Philip J. Reny (2000), *Advanced Microeconomic Theory*, 2nd ed., (Reading, MA: Addison-Wesley). required.

Silberberg, Eugene and Wing Suen (2000), *The Structure of Economics: A Mathematical Analysis*, 3rd ed., (New York: Irwin/McGraw-Hill). required.

Varian, Hal R. (1992), *Microeconomic Analysis*, 3rd ed., (New York: Norton). required. For errata see link below.

<http://www.sims.berkeley.edu/~hal/people/hal/Errata/errata-ma.html>

Mas-Collell, Andreu, Michael D. Whinston and Jerry R. Green (1995), *Microeconomic Theory*, (New York: Oxford University Press). required.

Cornes, Richard (1992), *Duality and Modern Economics* (Cambridge: Cambridge University Press). optional.

Chiang, Alpha C. (1984), *Fundamental Methods of Mathematical Economics*, 3rd ed., (New York: McGraw-Hill). optional.

Varian, Hal R. (2003), *Intermediate Microeconomics: A Modern Approach*, 6th ed., (New York: Norton). optional.

Bergstrom, Theodore C., and Hal R. Varian (2003), *Workouts in Intermediate Microeconomics*, 6th ed., (New York: Norton). optional.

Takayama, Akira (1985), *Mathematical Economics*, 2nd ed., (Cambridge: Cambridge University Press). optional.

GRADE DETERMINATION:	Homework	10%
	Mid-Term Exam	40%
	Final Exam	<u>50%</u>
	TOTAL	100%

EXAMINATION DATES:

Mid-Term Exam — Tuesday, October 7, 2003, 3:00-5:00 PM

Final Exam — Tuesday, December 16, 2003, 2:15-4:15 PM

PLEASE NOTE: Some journal articles can be accessed electronically at

<http://www.jstor.org/>.

SCHEDULE AND TENTATIVE TOPICS

I. INTRODUCTION

Lecture #1
Tuesday, August 26, 2003

Methodology

* Silberberg, Chapter 1, pp. 1-24.

Chiang, Chapter 1, pp. 3-6.

Takayama, Introduction, pp. xv-xxiii.

Varian, *Intermediate*, Chapter 1.

Bergstrom & Varian, Workout 1.

Lecture #2
Thursday, August 28, 2003

Mathematical Preliminaries

* Jehle, Appendices A1-A2, pp. 407-512.

* Varian, 3rd ed., Chapters 26-27, pp. 473-506.

* Mas-Colell, Appendix, pp. 926-970.

* Silberberg, Chapters, 2-5, pp. 25-116.

Cornes, Chapter 1, pp. 3-28.

Chiang, Chapter 2, pp. 7-32, and
Chapters 4-5, pp. 54-124.

Takayama, Chapter 0, Section A, pp. 5-39.

* indicates required reading.

Lecture #3
Tuesday, September 2, 2003

Introduction to Comparative Static Analysis

Chiang, Chapter 3, pp. 35-53, Chapters 6-12, pp. 127-432, and Chapter, 14, sections 14.1-14.2, pp. 470-479.

* Silberberg, Chapters 6-7, pp. 117-174 and Chapter 18, Section 18.2, pp. 545-550.

Takayama, Chapter 1, Sections A-E, pp. 59-133 and Chapter 3, Section A, pp. 295-302.

Varian, *Intermediate*, Chapter 16.

Bergstrom & Varian, Workout 16.

II. CONSUMER THEORY

* Jehle, Chapter 1, pp. 1-67, Chapter 2, Sections 2.1-2.3, pp. 69-92.

* Varian, 3rd ed., Chapters 7-9, pp. 94-159.

* Mas-Colell, Chapters 1-2, pp. 5-39, Chapter 3, Sections 3.A-3.H, pp. 40-80.

* Silberberg, Chapter 10, pp. 252-313, and Chapter 11, Sections 11.1-11.4, pp. 314-347.

Cornes, Chapters 2-4, pp. 31-103.

Takayama, Chapter 1, Section G, pp. 155-168, Chapter 2, Section B, pp.175-185, and Chapter 2, Section D, pp. 234-249.

Varian, *Intermediate*, Chapters 2-10.

Bergstrom & Varian, Workouts 2-10.

* indicates required reading.

Lecture #4 Consumer Preferences
Thursday, September 4, 2003

Lecture #5 Utility Maximization
Tuesday, September 9, 2003

Lecture #6 Properties of the Indirect Utility Function
Thursday, September 11, 2003 and the Marshallian Demand Functions

Lecture #7 Expenditure Minimization
Tuesday, September 16, 2003

Lecture #8 Properties of the Expenditure Function and
Thursday, September 18, 2003 the Hicksian Demand Functions

Diamond, P.A., and D.L. McFadden (1974), "Some Uses of the Expenditure Function in Public Finance," *Journal of Public Economics*, Vol. 3, No. 1, pp. 3-21.

* Gorman, W. M. (1976), "Tricks with Utility Functions," in: M. J. Artis and A. R. Nobay, eds., *Essays in Economic Analysis* (Cambridge: Cambridge University Press).

Lecture #9 Slutsky's Equation
Tuesday, September 23, 2003

* Samuelson, Paul A. (1974), "Complementarity: An Essay on the 40th Anniversary of the Hicks-Allen Revolution in Demand Theory," *Journal of Economic Literature*, Vol. 12, No. 4, pp. 1255-1289.

<http://links.jstor.org/sici?sici=0022-0515%28197412%2912%3C1255%3ACAEOT4%3E2.0.CO%3B2-3>
<http://www.jstor.org/view/00220515/dm990778/99p0003f?PAGE=0>

Lecture #10 Partial Equilibrium Welfare Analysis

* indicates required reading.

Thursday, September 25, 2003

- * Varian, 3rd ed., Chapter 10, pp. 160-171.
- * Jehle, Chapter 4, Section 4.3, pp. 165-171.
- * Mas-Colell, Chapter 3, Section 3.I, pp. 80-91, Chapter 10, Section 10.E, pp. 328-334.
- * Silberberg, Chapter 11, Section 11.5, pp. 347-357, and Chapter 19, Section 19.7, pp. 600-604.

Cornes, Chapter 9, pp. 204-235.

Willig, Robert D. (1976), "Consumer's Surplus Without Apology," *American Economic Review*, Vol. 66, No. 4, pp. 589-597.

<http://links.jstor.org/sici?sici=0002-8282%28197609%2966%3C589%3ACSWA%3E2.0.CO%3B2-1>
<http://www.jstor.org/view/00028282/di950132/95p0040v?PAGE=0>

- * Hausman, Jerry A. (1981), "Exact Consumer's Surplus and Deadweight Loss," *American Economic Review*, Vol. 71, No. 4, pp. 662-676.

<http://links.jstor.org/sici?sici=0002-8282%28198109%2971%3C662%3AECSADL%3E2.0.CO%3B2-3>
<http://www.jstor.org/view/00028282/di950023/95p0011d?PAGE=0>

Haveman, Robert H., Mary Gabay, and James Andreoni (1987), "Exact Consumer's Surplus and Deadweight Loss: A Correction," *American Economic Review*, Vol. 77, No. 3, pp. 494-495.

<http://links.jstor.org/sici?sici=0002-8282%28198706%2977%3C494%3AECSADL%3E2.0.CO%3B2-G>
<http://www.jstor.org/view/00028282/di950058/95p0061s?PAGE=0>

- * Laffont, Jean-Jacques (1988), *Fundamental of Public Economics*, (Cambridge, Massachusetts: MIT Press) Chapter 6, Section 6.1, pp.139-153.

Varian, *Intermediate*, Chapter 14.

Bergstrom & Varian, Workout 14.

* indicates required reading.

Lecture #11 Partial Equilibrium Welfare Analysis (Continued)
Tuesday, September 30, 2003

Lecture #12 Partial Equilibrium Welfare Analysis (Continued)
Thursday, October 2, 2003

Lecture #13 **MID-TERM EXAMINATION**
Tuesday, October 7, 2003 3:00-5:00 PM

III. THEORY OF THE FIRM

* Jehle, Chapter 3, pp. 117-150.

* Varian, 3rd ed., Chapters 1-6, pp. 1-93.

* Mas-Colell, Chapter 5, Sections 5.A-5.D, pp. 127-147.

* Silberberg, Chapters 8-9, pp. 175-251 and
Chapter 14, pp. 418-447.

Cornes, Chapter 5, pp. 104-138.

Chiang, Chapter 21, pp. 716-755.

Takayama, Chapter 0, Section C, pp. 49-58, and
Chapter 1, Section F, pp. 133-155.

Varian, *Intermediate*, Chapters 18-22.

Bergstrom & Varian, Workouts 18-22.

Lecture #14 Production Theory & Cost Minimization

* indicates required reading.

Thursday, October 9, 2003

Lecture #15

Tuesday, October 14, 2003

Properties of the Cost Function and the
Conditional Factor Demand Functions

Lecture #16

Thursday, October 16, 2003

Profit Maximization

Lecture #17

Tuesday, October 21, 2003

Properties of the Profit Function, and the
Output Supply and Input Demand Functions

Lecture #18

Thursday, October 23, 2003

Comparative Static Analysis:
(i) The Algebraic Approach
(ii) The Neoclassical Approach
(iii) The Dual Approach

Lecture #19

Tuesday, October 28, 2003

Comparative Static Analysis (continued)

IV. MARKET STRUCTURE

* Jehle, Chapter 4, Sections 4.1-4.2, pp. 153-164.

* Varian, 3rd ed., Chapters 13-14, pp. 215-258 and
Chapter 16, pp. 285-312.

* Mas-Colell, Chapter 12, Sections 12.A-12.C, pp. 383-
400.

Varian, *Intermediate*, Chapters 15, 23-29.

Bergstrom & Varian, *Workouts* 15, 23-29.

Silberberg, Chapter 19, Section, 19.4, pp. 662-666.

Lecture #20

Thursday, October 30, 2003

The Perfectly Competitive Industry:
A Homogeneous Firms Model

Lecture #21

The Perfectly Competitive Industry:

* indicates required reading.

- Tuesday, November 4, 2003 (continued)
- Lecture #22 The Standard Monopoly Model
Thursday, November 6, 2003
- Lecture #23 Monopolistic Competition:
Thursday, November 13, 2003 Chamberlin's Model
- Lecture #24 Oligopoly:
Tuesday, November 18, 2003 Reaction Functions
Conjectural Variations
Cournot Model
Stackelberg Model
- Lecture #25 Welfare Effects of Monopoly Pricing:
Thursday, November 20, 2003 Price Discrimination
Ramsey Pricing
Two-Tier Pricing

V. MICROECONOMIC THEORY AND ECONOMETRICS

- Lecture #26 Theoretical Properties and Their Implications
Tuesday, November 25, 2003 for Empirical Analysis

* Varian, 3rd ed., Chapter 12, pp. 198-214.

* Silberberg, Chapter 11, Section 11.6, pp. 357-363.

Cornes, Chapter 8, pp. 189-203.

* Diewert, W. Erwin (1974), "Applications of Duality Theory," in: M.D. Intriligator and D.A. Kendrick, eds., *Frontiers of Quantitative Economics, Volume II*, (Amsterdam: North Holland), pp. 106-171.

VI. INTRODUCTION TO UNCERTAINTY AND INFORMATION THEORY

* indicates required reading.

Lecture #27
Tuesday, December 2, 2003

Expected Utility Theory

- * Jehle, Chapter 2, Section 2.4, pp. 92-116.
- * Varian, 3rd ed., Chapter 11, pp. 172-197.
- * Mas-Colell, Chapter 6, pp. 167-215.
- * Silberberg, Chapter 13, pp. 394-417.

Varian, *Intermediate*, Chapter 12.

Bergstrom & Varian, Workout 12.

von Neumann, John, and Oskar Morgenstern (1944),
Theory of Games and Economic Behavior,
(Princeton: Princeton University Press),
Chapter 1, Section 3, pp. 15-31.

Lecture #28
Thursday, December 4, 2003

Risk Aversion

- * Pratt, John W. (1964), "Risk Aversion in the Small and in the Large," *Econometrica*, Vol. 32, No. 1-2, pp. 122-136.

<http://links.jstor.org/sici?sici=0012-9682%28196401%2F196404%2932%3C122%3ARAITSA%3E2.0.CO%3B2-K>
<http://www.jstor.org/view/00129682/di952559/95p00103?PAGE=0>

Arrow, Kenneth J. (1971), *Essays in the Theory of Risk Bearing*, (Chicago: Markham). optional

- * Rothschild, Michael L. and Joseph Stiglitz (1970), "Increasing Risk I: A Definition," *Journal of Economic Theory*, Vol. 2, pp. 225-243.

- * Rothschild, Michael L. and Joseph Stiglitz (1971), "Increasing Risk II: Its Economic Consequences," *Journal of Economic Theory*,

* indicates required reading.

Vol. 3, pp. 66-84.

Lecture #29
Tuesday, December 9, 2003

Moral Hazard

Varian, *Intermediate*, Chapter 36.

Bergstrom & Varian, Workout 36.

* Pauly, Mark V. (1974), "Overinsurance and Public Provision of Insurance: The Roles of Moral Hazard and Adverse Selection," *Quarterly Journal of Economics*, Vol. 88, No. 1, pp. 44-62.

<http://links.jstor.org/sici?sici=0033-5533%28197402%2988%3C44%3AOAPPOI%3E2.0.CO%3B2-X>
<http://www.jstor.org/view/00335533/di951815/95p0209u?PAGE=0>

Arnott, Richard and Joseph Stiglitz (1990), "The Welfare Effects of Moral Hazard," in : Henri Loubergé, ed. *Risk, Information and Insurance* (Boston: Kluwer), pp. 91-121.

Arnott, Richard and Joseph Stiglitz (1988), "The Basic Analytics Effects of Moral Hazard," *Scandinavian Journal of Economics* Vol. 90, No. 3, pp. 383-413.

Lecture #30
Thursday, December 11, 2003

Adverse Selection

Akerlof, George A. (1970), "The Market for 'Lemons': Qualitative Uncertainty and the Price Mechanism," *Quarterly Journal of Economics*, Vol. 84, No. 3, pp. 488-500.

<http://links.jstor.org/sici?sici=0033-5533%28197008%2984%3C488%3ATMF%22QU%3E2.0.CO%3B2-6>
<http://www.jstor.org/view/00335533/di951801/95p0304u?PAGE=0>

* Rothschild, Michael and Joseph Stiglitz (1976), "Equilibrium in Competitive Insurance Markets:

* indicates required reading.

An Essay on the Economics of Imperfect
Information," *Quarterly Journal of Economics*,
Vol. 90, No. 4, pp. 629-650.

<http://links.jstor.org/sici?sici=0033-5533%28197611%2990%3C629%3AEICIMA%3E2.0.CO%3B2-O>
<http://www.jstor.org/view/00335533/di951826/95p0069o?PAGE=0>

FINAL EXAM - Tuesday, December 16, 2003, 2:15-4:15 PM

* indicates required reading.