

**UNIVERSITY OF HAWAII AT MĀNOA**  
**Department of Economics**

ECON 301(001)  
Intermediate Microeconomics  
Spring 2009  
<http://myuhportal.hawaii.edu>  
<http://www.aplia.com>

**Aplia™ Course Key: 2RLW-HTWE-22AK**

Revised 01/09/2009  
Subject to further revision.

Spring Semester 2009  
Lecture: MWF 10:30-11:20 PM  
Room: Webster 112

Instructor: Gerard Russo  
Office Hours: MF 1:30-2:30 PM  
or by appointment  
Office: Saunders Hall, Rm. 515B  
Saunders Hall, Rm. 543 (enter thru 542)  
Phone: 956-7065  
956-8730  
E-mail: russo@hawaii.edu

**COURSE DESCRIPTION and LEARNING OBJECTIVES:**

Intermediate microeconomics is an analytical approach to economics which uses rigorous logical reasoning. The course begins with axioms about consumers' preferences and producers' technologies, and postulates of their respective behavioral objectives (i.e., utility maximization and profit maximization) to generate supply and demand models with optimization techniques. These models in turn are used to generate refutable propositions and empirical frameworks for testing same. These microeconomic models are extended in a number of ways under varying assumptions concerning market structure, information, the number and interactions of economic agents as well as differing product properties and technologies. The course represents an elegant systematic analysis of individual and social choice and the resultant equilibrium levels of prices, output and material well being. A modern game-theoretic approach is brought to bear at appropriate junctures to analyze individual and industry interactions.

The course includes statement and informal proof of important theorems in economics including, but not limited to, the First Fundamental Theorem of Welfare Economics, the Second Fundamental Theorem of Welfare Economics and Arrow's Impossibility Theorem. Arrow's Theorem, in particular, has had an important impact on the disciplines economics, political science and philosophy because of both its implications and proof construction. In addition, students are required to sketch out the main ideas of simple proofs on a daily basis. For example, students must be able to show that under appropriate assumptions, profit maximization implies upward sloping supply curves for output and downward sloping demand curves for labor.

The real power of economic analysis comes in calculating quantitative answers to economics problems. Students of ECON 301 engage in extensive problem solving which includes the calculation of various individual and market equilibria, and constrained optimization. They are

trained to analyze these results in terms of prices, resource allocation and social welfare.

Students are required to use geometry and algebra to solve for consumer and producer optima and various market equilibria. The intuition of calculus in the form of marginal analysis is used extensively by the students in all aspects of the course. However, the formal mathematics of calculus is not required and will be sparingly demonstrated. Economic models can be represented graphically, mathematically and with prose. Students are required to demonstrate virtuosity will all three representations through homework assignments, course exams and in-class presentations.

This course examines how the allocation of resources is achieved through market mechanisms. It begins by asking, why an efficient allocation of resources is an economic goal, how societies attempt to achieve that goal and how it might best be achieved. The goals of this course are twofold: first, to train the student to use the analytical tools of economics, primarily model building, with optimization and equilibrium analysis as subtools; and second, to train the student to think like an economist and apply the analytical tools to a wide range of social issues. More specifically the course begins with the most basic tool, supply and demand analysis. This provides an overview of market allocation, but to fully understand models of markets, we must examine the behavioral assumptions of the economic agents, the incentives they face, the technology and information available to them, as well as the institutional structure in which they operate. Consumer theory underlies demand analysis and theory of the firm underlies supply analysis. Throughout the analyses, it is asked if a market is allocating resources efficiently, being careful to draw sharp distinctions between allocative and technical efficiency. Although microeconomics is primarily concerned with the goal of economic efficiency, the equity implications of varying allocations will be discussed. The main theoretical topics include; the nature of consumer demand, production and costs, monopoly, perfect competition, oligopoly, and monopolistic competition. Special topics will include; government regulation, taxes, externalities, public goods, game theory and uncertainty. The analytical skills required for successful completion of this course are quite substantial the course relies heavily on mathematics and graphics. The student should have a firm understanding of the material contained in the prerequisite courses, although strong intuition and verbal skills can be partial substitutes for more technical ability. Calculus is recommended, but not required. Students should have training in mathematics up to and including pre-calculus. This course is extremely analytical. Only students serious about economics are encouraged to enroll.

PREREQUISITE: ECON 130 or equivalent

TEACHING METHODOLOGY: Lecture with discussion. Intense problem solving. Online homework. Demonstration of formal proofs.

PRIMARY TEXT (required): Varian, Hal R. (2006), *Intermediate Microeconomics: A Modern Approach*, 7th Edition, (New York: W.W. Norton & Co.). ISBN-13: 978-0-393-92702-3; ISBN-10: 0-393-92702-4. **[Book with Aplia access ISBN: 0-393-17103-5]**

WORKBOOK (required): Bergstrom, Theodore C., and Hal R. Varian (2006), *WORKOUTS in Intermediate Microeconomics*, 7th Edition,

(New York: W.W. Norton & Co.). ISBN 0-393-97831-1.

GRADE DETERMINATION: Course grades will be assigned on the UHM plus/minus grading system. <http://www.catalog.hawaii.edu/>. Grades will be based upon class attendance, problem sets, 2 midterm exams and a final exam weighted in the following fashion:

Problem Sets (Workouts)	20%
Attendance & Class Participation	10%
First Mid-Term Exam (02/20/2009)	20%
Second Mid-Term Exam (04/13/2009)	20%
Final Exam (05/11/2009)	30%
TOTAL	100%

Examinations will include short answer, problem solving, graphical analysis, and essay style questions. Some questions on the exams will be drawn from the problem sets.

**PLEASE NOTE: Attendance at all examinations is mandatory. No make-up examinations will be offered under any circumstances. Students who do not sit for an exam will receive zero (0) points and a “F” letter grade on that examination. This will adversely affect the students’ course grade. Students who miss any of the above scheduled examinations are advised to withdraw from the course at their earliest opportunity. Letter grades are assigned on the University of Hawaii plus/minus grading system. Class attendance is required. Students unable to attend the course lectures as scheduled should withdraw immediately. Attendance will be measured through a sign-in system. Students unable to attend the entire lecture should not sign-in. Because attendance will count toward course credit, abuse of the sign-in system will be treated as academic dishonesty. There are no excused absences. There are no excused exams. There are no excused homework assignments. The course operates on a no excuses basis throughout. Complete your online homework assignments in advance of the due dates.**

**Students traveling on official University activities (e.g., students on athletic teams, band, etc.) are expected to complete their online homework while on travel. Contact your team/department academic advisor and request a laptop computer and internet access for use from your hotel/motel room or other travel location. Students on official travel may take examinations at their travel destination with advance approval, if their official travel schedule conflicts with the examination dates. Contact your head coach, academic advisor and/or other responsible University employee and request assistance with this matter. Please be aware that all absences from the classroom are considered un-excused. However, grades for attendance will be sufficiently curved to allow for a small amount of time for travel, illness and/or family emergency.**

**The KOKUA Program provides academic access services to students with documented physical and/or mental disabilities. E-mail: [kokua@hawaii.edu](mailto:kokua@hawaii.edu).  
Web: [www.hawaii.edu/kokua](http://www.hawaii.edu/kokua)**

TENTATIVE COURSE SCHEDULE  
(Subject to Revision)

Reading: Chapter 1

Lecture 1 [Monday, January 12, 2009]  
Introduction:  
Economic Methodology  
Positive vs. Normative Economics  
Microeconomics vs. Macroeconomics  
Fundamental Principles of Scarcity and Choice  
Mathematics and Graphics in Economics  
Technical Efficiency vs. Allocative Efficiency  
Efficient Resource Allocation  
Partial Equilibrium Analysis vs. General Equilibrium  
Analysis  
Model Building:  
Equilibrium Analysis  
Optimization Analysis

Lecture 2 [Wednesday, January 14, 2009]  
Supply and Demand Analysis:  
Determinants of Demand  
Prices  
Incomes  
Tastes  
Expectations  
Determinants of Supply  
Output Prices  
Input Prices  
Technology  
Weather  
Expectations  
Comparative Static Analysis  
Normal Goods  
Inferior Goods  
Complementary Goods  
Substitute Goods

Workout 1 due

Lecture 3 [Friday, January 16, 2009]  
Supply and Demand Analysis:  
Market Equilibrium  
Price Ceilings and Price Floors  
Economic Surpluses and Economic Shortages

Readings: Chapter 2

Lecture 4 [Wednesday, January 21, 2009]  
Consumer Theory:  
Budget Sets

Budget Lines  
Prices and Income

Readings: Chapter 3 Workout 2 due	<u>Lecture 5</u> Consumer Theory (continued): Preferences and Tastes Utility Theory Cardinal Utility vs. Ordinal Utility Utility Functions Indifference Curves	[Friday, January 23, 2009]
Readings: Chapter 4	<u>Lecture 6</u> Consumer Theory (continued): Preferences and Tastes Utility Theory Cardinal Utility vs. Ordinal Utility Utility Functions Indifference Curves	[Monday, January 26, 2009]
Reading: Chapter 5	<u>Lecture 7</u> Consumer Theory (continued): Derivation of a Demand Curve Giffen Goods	[Wednesday, January 28, 2009]
Reading: Chapter 6 Workout 3 due	<u>Lecture 8</u> Consumer Theory (continued): Applications: Transfers in Cash vs. Transfers in Kind Income Taxes vs. Commodity Taxes	[Friday, January 30, 2009]
Readings: Chapter 7 Workout 4 due	<u>Lecture 9</u> Revealed Preference: Preferred Region Dominated Region Non-satiation (more is preferred to less) Weak Axiom of Revealed Preference (WARP) Strong Axiom of Revealed Preference (SARP)	[Monday, February 2, 2009]
	<u>Lecture 10</u> Revealed Preference (continued): Application: Simultaneous Income and Relative Price Changes with Possible Consumer Responses Delineated via Revealed Preference	[Wednesday, February 4, 2009]

Workout 5 due	<u>Lecture 11</u> Workout Review Session	[Friday, February 6, 2009]
Readings: Chapter 8	<u>Lecture 12</u> Slutsky's Equation: Price Effect Income Effect Substitution Effect Giffen Goods Revisited Slutsky Compensation vs. Hicksian Compensation	[Monday, February 9, 2009]
	<u>Lecture 13</u> Slutsky's Equation (continued):	[Wednesday, February 11, 2009]
Workouts 6 & 7 due	<u>Lecture 14</u> Workout Review Session	[Friday, February 13, 2009]
Workout 8 due	<u>Lecture 15</u> Workout Review Session	[Wednesday, February 18, 2009]
	<u>Lecture 16</u> FIRST MIDTERM EXAM Friday, February 20, 2009 10:30-11:20 AM	[Friday, February 20, 2009]
	<u>Lecture 17</u> REVIEW FIRST MIDTERM EXAM	[Monday, February 23, 2009]
Readings: Chapters 14, 15 & 16	<u>Lecture 18</u> Consumers' Surplus and Producers' Surplus The Demand Curve: A Measure of Marginal Social Benefit The Supply Curve: A Measure of Marginal Social Cost Elasticities: Elasticity (sensitivity, responsiveness) Price Elasticity of Demand Relationship to Total Revenue Substitutability: The Key to Elasticity Measurement Arc Elasticity vs. Point Elasticity	[Wednesday, February 25, 2009]

Income Elasticity of Demand  
Cross-Price Elasticity of Demand  
Price Elasticity of Supply

	<u>Lecture 19</u> Elasticities (continued) Application: Excise Tax Incidence	[Friday, February 27, 2009]
Workout 14 due	<u>Lecture 20</u> Workout Review Session	[Monday, March 2, 2009]
Workout 15 due	<u>Lecture 21</u> Workout Review Session	[Wednesday, March 4, 2009]
Workout 16 due	<u>Lecture 22</u> Workout Review Session	[Friday, March 6, 2009]
Readings: Chapters 18	<u>Lecture 23</u> Theory of the Firm: Production Technology Production Sets Production Functions Total Product Average Product Marginal Product	[Monday, March 9, 2009]
Readings: Chapters 19 Workout 18 due	<u>Lecture 24</u> Theory of the Firm: Production (continued)	[Wednesday, March 11, 2009]
Workout 19 due	<u>Lecture 25</u> Workout Review Session	[Friday, March 13, 2009]
Readings: Chapter 20	<u>Lecture 26</u> Production (continued): Isoquants Isocost Lines Technical Efficiency Cost Minimization Efficient Expansion Path (EEP)	[Monday, March 16, 2009]

Readings: Chapter 21 Workout 20 due	<u>Lecture 27</u> Theory of the Firm: Duality - The Relation Between Product Curves and Cost Curves Variable Costs Fixed Costs Sunk Costs Opportunity Cost Total Cost (TC) Total Fixed Cost (TFC) Total Variable Cost TVC) Marginal Cost (MC) Average Total Cost (ATC) Average Variable Costs (AVC) Short Run Cost Curves Long Run Cost Curves Economies of Scale (EOS)	[Wednesday, March 18, 2009]
Workout 21 due	<u>Lecture 28</u> Workout Review Session	[Friday, March 20, 2009]
Readings: Chapter 22	<u>Lecture 29</u> Theory of the Firm: Perfect Competition Many Firms Price Taking Behavior Homogeneous Product Free Entry and Exit Economic Profits vs. Accounting Profits Opportunity Costs Profit Maximization Total Revenue (TR) Average Revenue (AR) Marginal Revenue (MR) The Individual Firm in Equilibrium	[Monday, March 30, 2009]
Readings: Chapter 23 Workout 22 due	<u>Lecture 30</u> Perfectly Competitive Industry: Short-Run Supply Curve of the Firm Short-Run Supply Curve of the Industry Long-Run Equilibrium for the Firm Long-Run Supply Curve for the Industry Increasing Cost Industry Constant Cost Industry Decreasing Cost Industry Welfare Implications of Competitive Market Structure Profit vs. Producer Surplus Economic Rents Quasi-Rents	[Wednesday, April 1, 2009]

Workout 23 due	<u>Lecture 31</u> Workout Review Session	[Friday, April 3, 2009]
	<u>Lecture 32</u> Workout Review Session	[Monday, April 6, 2009]
Readings: Chapter 24 Workout 24 due	<u>Lecture 33</u> Theory of the Firm: Monopoly One Firm Price Making Behavior Homogeneous Product Barriers to Entry Profit Maximization Revenue (Sales) Maximization Welfare Implications of Monopoly Pricing	[Wednesday, April 8, 2009]
	<u>Lecture 34</u> SECOND MIDTERM EXAM Monday, April 13, 2009 10:30-11:20 AM	[Monday, April 13, 2009]
Reading: Chapter 25	<u>Lecture 35</u> Monopoly (continued): Price Discrimination Arbitrage 1st Degree Price Discrimination (Perfect) 2nd Degree Price Discrimination 3rd Degree Price Discrimination Equity and Welfare Implications Monopoly (continued): Regulation of Natural Monopolies Theory of the Firm: Monopolistic Competition Many Firms Price Taking Behavior Differentiated Products Free Entry and Exit Advertising	[Wednesday, April 15, 2009]
Workout 25 due	<u>Lecture 36</u> Workout Review Session	[Friday, April 17, 2009]
Readings: Chapter 27	<u>Lecture 37</u> Theory of the Firm: Oligopoly Few Firms Price Making Behavior	[Monday, April 20, 2009]

Homogeneous or Differentiated Products  
Barriers to Entry  
Kinked Demand Curve Model  
Dominant Firm Model  
Cournot Model  
Stackelberg Model

Workout 27 due	<u>Lecture 38</u> Workout Review Session	[Wednesday, April 22, 2009]
Reading: Chapter 28	<u>Lecture 39</u> Oligopoly Theory (continued) Introduction to Game Theory: Dominant Strategies Mixed Strategies Nash Equilibrium Prisoner's Dilemma	[Friday, April 24, 2009]
Workout 28 due	<u>Lecture 40</u> Workout Review Session	[Monday, April 27, 2009]
Readings: Chapter 31 Workout 31 due	<u>Lecture 41</u> General Equilibrium Analysis: Exchange Partial Equilibrium vs. General Equilibrium The Edgeworth Box Gains from Trade Walras' Law Pareto Efficiency The First Welfare Theorem The Second Welfare Theorem	[Wednesday, April 29, 2009]
	<u>Lecture 42</u> General Equilibrium Analysis: Production Comparative Advantage General Equilibrium Analysis: Welfare Arrow's Impossibility Theorem Social Welfare Functions	[Friday, May 1, 2009]
Readings: Chapter 34 & 36 Workout 34 due	<u>Lecture 43</u> Externalities & Public Goods	[Monday, May 4, 2009]
Workout 36 due	<u>Lecture 44</u> Workout Review Session	[Wednesday, May 6, 2009]

**FINAL EXAM**  
**Monday, May 11, 2009**  
**9:45-11:45 AM**  
**WEB 112**