UNIVERSITY OF HAWAI'I AT MĀNOA
Department of Economics

ECON 301(002)
Intermediate Microeconomics
Spring 2008
http://myuhportal.hawaii.edu
http://www.aplia.com

UHM Foundations Course: Symbolic Reasoning (FS)
http://www.hawaii.edu/gened/foundations.htm

Aplia™ Course Key:
Revised 11/23/07
Subject to further revision.

Spring Semester 2008
Lecture: MWF 10:30-11:20 PM
Room: Webster 104

Instructor: Gerard Russo
Office Hours: MW 1:30-2:30 PM
or by appointment
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Saunders Hall, Rm. 543
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


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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Problem Sets (Workouts)</td>
<td>20%</td>
</tr>
<tr>
<td>Attendance &amp; Class Participation</td>
<td>10%</td>
</tr>
<tr>
<td>First Mid-Term Exam (02/22/2008)</td>
<td>20%</td>
</tr>
<tr>
<td>Second Mid-Term Exam (04/14/2008)</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam (05/16/2008)</td>
<td>30%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
</tr>
</tbody>
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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. Web: www.hawaii.edu/kokua
TENTATIVE COURSE SCHEDULE
(Subject to Revision)

Reading: Chapter 1  Lecture 1  [Monday, January 14, 2008]
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 16, 2008]
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 18, 2008]
Supply and Demand Analysis:
   Market Equilibrium
   Price Ceilings and Price Floors
   Economic Surpluses and Economic Shortages

Readings: Chapter 2  Lecture 4  [Wednesday, January 23, 2008]
Consumer Theory:
   Budget Sets
Readings: Chapter 3

Lecture 5  
[Friday, January 25, 2008]
Consumer Theory (continued):
Preferences and Tastes
Utility Theory
Cardinal Utility vs. Ordinal Utility
Utility Functions
Indifference Curves

Readings: Chapter 4

Workout 2 due
Lecture 6  
[Monday, January 28, 2008]
Consumer Theory (continued):
Preferences and Tastes
Utility Theory
Cardinal Utility vs. Ordinal Utility
Utility Functions
Indifference Curves

Reading: Chapter 5

Lecture 7  
[Wednesday, January 30, 2008]
Consumer Theory (continued):
Derivation of a Demand Curve
Giffen Goods

Reading: Chapter 6

Workout 3 due
Lecture 8  
[Friday, February 1, 2008]
Consumer Theory (continued):
Applications:
Transfers in Cash vs. Transfers in Kind
Income Taxes vs. Commodity Taxes

Readings: Chapter 7

Workout 4 due
Lecture 9  
[Monday, February 4, 2008]
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)

Lecture 10  
[Wednesday, February 6, 2008]
Revealed Preference (continued):
Application:
Simultaneous Income and Relative Price Changes with Possible Consumer Responses Delineated via Revealed Preference
Workout 5 due
Lecture 11
Workout Review Session

Workout Review Session
Lecture 12
Readings: Chapter 8
Slutsky's Equation:
Price Effect
Income Effect
Substitution Effect
Giffen Goods Revisited
Slutsky Compensation vs. Hicksian Compensation

Lecture 13
Slutsky's Equation (continued):

Lecture 14
Workout Review Session

Lecture 15
Workout Review Session

Lecture 16
FIRST MIDTERM EXAM
Friday, February 22, 2008
10:30-11:20 AM

Lecture 17
REVIEW FIRST MIDTERM EXAM

Readings:
Lecture 18
Chapters 14, 15 & 16
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
Income Elasticity of Demand
Cross-Price Elasticity of Demand
Price Elasticity of Supply
Elasticities (continued)
Application: Excise Tax Incidence

Lecture 19 [Friday, February 29, 2008]
Mid-Term Review Session

Workout 14 due Lecture 20 [Monday, March 3, 2008]
Workout Review Session

Workout 15 due Lecture 21 [Wednesday, March 5, 2008]
Workout Review Session

Workout 16 due Lecture 22 [Friday, March 7, 2008]
Workout Review Session

Readings: Chapters 18 Lecture 23 [Monday, March 10, 2008]
Theory of the Firm: Production
Technology
Production Sets
Production Functions
Total Product
Average Product
Marginal Product

Readings: Chapters 19 Lecture 24 [Wednesday, March 12, 2008]
Workout 18 due Theory of the Firm: Production (continued)

Workout 19 due Lecture 25 [Friday, March 14, 2008]
Workout Review Session

Readings: Chapter 20 Lecture 26 [Monday, March 17, 2008]
Production (continued):
Isoquants
Isocost Lines
Technical Efficiency
Cost Minimization
Efficient Expansion Path (EEP)
Readings: Chapter 21
Workout 20 due

Lecture 27
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)

Workout 21 due

Lecture 28
Workout Review Session

Readings: Chapter 22

Lecture 29
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

Readings: Chapter 23
Workout 22 due

Lecture 30
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
Workout 23 due Lecture 31 Workout Review Session [Monday, April 7, 2008]

Lecture 32 Workout Review Session [Wednesday, April 9, 2008]

Readings: Chapter 24 Lecture 33 Theory of the Firm: Monopoly [Friday, April 11, 2008]
Workout 24 due
Readings: Chapter 24
Workout 24 due

Lecture 33 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

Lecture 34 SECOND MIDTERM EXAM [Monday, April 14, 2008]
Monday, April 14, 2008
10:30-11:20 AM

Reading: Chapter 25 Lecture 35 [Wednesday, April 16, 2008]
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

Workout 25 due Lecture 36 Workout Review Session [Friday, April 18, 2008]

Readings: Chapter 27 Lecture 37 [Monday, April 21, 2008]
Theory of the Firm: Oligopoly
Few Firms
Price Making Behavior
Homogeneous or Differentiated Products
Barriers to Entry
Kinked Demand Curve Model
Dominant Firm Model
Cournot Model
Stackelberg Model

Lecture 38
Workout 27 due
Workout Review Review Session

Reading: Chapter 28
Lecture 39
Oligopoly Theory (continued)
Introduction to Game Theory:
Dominant Strategies
Mixed Strategies
Nash Equilibrium
Prisoner's Dilemma

Workout 28 due
Workout Review Session

Readings: Chapter 30
Lecture 41
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

Workout 30 due

Readings: Chapter 31&32
Lecture 42
General Equilibrium Analysis: Production
Comparative Advantage
General Equilibrium Analysis: Welfare
Arrow's Impossibility Theorem
Social Welfare Functions

Workout 31 & 32 due

Readings: Chapter 33 & 35
Lecture 43
Externalities & Public Goods

Workout 33 & 35 due
Workout Review Session

Lecture 44
[Wednesday, April 23, 2008]
[Friday, April 25, 2008]
[Monday, April 28, 2008]
[Wednesday, April 30, 2008]
[Friday, May 2, 2008]
[Monday, May 5, 2008]
[Wednesday, May 7, 2008]
FINAL EXAM
Friday, May 16, 2008
9:45-11:45 AM
WEB 104