

Outline of Topics for Econ 601 and 603  
Microeconomic Theory Core

- I. Review of Optimization Theory
- II. Theory of the Firm
  - Technology
  - Cost Minimization and Cost Function
  - Envelope Theorem and Comparative Statics
  - Profit Maximization and Profit Function
  - Long Run vs. Short Run
  - Duality
  - Joint Production (as time permits)
- III. Theory of the Consumer
  - Preferences, Utility Function and Utility Maximization
  - Duality: Indirect Utility and Expenditure Functions
  - Slutsky Equation
  - Separability and Homotheticity
  - Consumer Surplus and Compensating/Equivalent Variations
  - Revealed Preferences
- IV. Risk/ Uncertainty Analysis
  - Axiomatic Basis Expected Utility Theorem
  - Modeling Behavior under Risk
  - Insurance, Portfolio and other risk problems (as time permits)
- V. Partial Equilibrium in a Competitive Industry
  - Aggregation and Market Demands
  - Market Supply: Short Run and Long Run
  - Equilibrium: Short Run and Long Run
  - Welfare Analysis of Equilibrium
- VI. Monopoly and Imperfect Competition
  - Pure Monopoly Solution
  - Monopoly vs. Competition: Price, Output, Welfare
  - Price Discrimination
  - Policy - Price Controls, Subsidies
  - Oligopoly: Cournot, Bertrand and Stackelberg (done with game theory - below)

- VII. Introduction to Game Theory
  - Normal Form Games
  - Iterated Elimination of Strictly Dominated Strategies
  - Rationalizable Strategies
  - Trembling Hand Perfect Equilibrium
  - Dynamic games
  - Repeated Games
- VIII. Principal Agent Problem (Moral Hazard)
- IX. Adverse Selection Problems
- X. Signalling Games (as time permits)
- XI. General Equilibrium - Exchange Economy
  - Existence and Efficiency Properties of Walrasian Equilibrium
  - Nonconvexities and Existence
- XII. General Equilibrium - Production Economy
  - Individual and Aggregate Production Efficiency
  - Existence Equilibrium - Role Convexity
  - First and Second Welfare Theorems
  - Two sector model
- XIII. Welfare Issues and Market Failures
  - Externalities: Source Failure and Optimal Policy
  - Public Goods and Optimal Provision
  - Theory Second Best and Policy
- XIV. Extensions (Interpretations) General Equilibrium Model
  - Uncertainty and Arrow-Debreu Markets
  - Intertemporal model