

Elliott School Online Review of Intermediate Microeconomics

This online (non-credit) program is designed primarily to help students who have already completed an intermediate microeconomics course but need to review the material for use in other courses. The program presumes knowledge of introductory microeconomics and prior exposure to intermediate microeconomics tools. Graphical and algebraic techniques will be used and the emphasis will be on developing strong economic intuition. Formal mathematical modeling using calculus is not developed in the program.

- The primary goal of this program is to prepare students take courses at the Elliott School, especially as Econ 6283 (International Trade Theory and Policy) and Econ 6250 (Survey of Economic Development). The program will help prepare candidates entering the public policy and applied economics programs at George Washington University.
- The program also will help prepare students to satisfy the intermediate microeconomic theory proficiency requirement for the Elliott School's MIEP program.
- Problem sets and answer keys are provided in each part of the program. These are not graded but will be very useful practice.

The program is designed to be completed over an eight-week period. Participants will have access to all materials as soon as payment is received by the Elliott School's Institute for International Economic Policy (IIEP).

The main set of resources are video lectures offered either through Vimeo or YouTube. Practice problems and answer keys will be distributed through "Coursesites.com". An example of one of the lectures can be found [here](#).

Treat the video lectures as you would an in-person class. Take detailed notes. Repeat the videos to understand concepts you do not understand. Study your notes. Economics is a discipline that one can only understand by writing and practicing. Passive viewing will not be sufficient for the vast majority of students.

Overview

Microeconomics is the study of how consumers, workers, firms and governments make "optimal" choices when resources are limited. This analysis will focus on situations where these agents have choices between two options, i.e. relative prices and relative costs will play a central role. We will examine both perfect competition and imperfect competition, including monopoly, monopolistic competition, and duopoly models. We will also develop basic tools used in public policy to understand for example, the economic impact of taxes, subsidies, international trade, and international economic development programs.

Textbook: There is no required textbook but almost any intermediate microeconomics textbook will cover these issues, which are fundamental to the subject. Microeconomics by Goolsbee, Levitt, and Syverson is particularly helpful and relevant reading assignments in that textbook will be noted. Used versions of this textbook can be found easily on the internet

Program Prerequisites

Participants should have successfully completed an introductory microeconomics and intermediate microeconomics course before beginning this program. Those with a strong motivation to learn the material but who have only had introductory microeconomics also may find it very helpful. Participants must be able to manipulate, interpret, and understand graphs and be able to do simple algebra. Calculus is **not** used in this program.

Program Schedule Overview

The program is divided into various sections. Each part can be completed in about one week: count about 6 hours per section to review videos, take notes, and complete practice problems and readings.

- Part 1 includes a quick review of microeconomics principles topics. Topics covered include supply and demand curves, producer and consumer surplus, cost curves, perfect competition and monopoly. This is presumed knowledge throughout the program.
- Part 2 is an introduction to consumer theory using utility functions, indifference curves and budget constraints as the primary tools.
- Part 3 introduces neoclassical production theory. The principal tools are production functions, isoquants, and isocost lines. We will examine factor markets and the optimal choice of labor and capital by a profit-maximizing firm in a perfectly competitive setting.
- Part 4 includes a discussion of the implication of various types of imperfect competition, including monopoly, monopolistic competition, and duopoly markets (Cournot and Bertrand). We will also introduce monopsony models, i.e. situations with only one buyer of a product.
- Parts 5 and 6 introduces general equilibrium results as well as choices made over time.
- Part 7 examines the impact of various government interventions when the market is working efficiently. The focus will be on identifying and explaining “deadweight losses” as means to measure economic inefficiency.
- Part 8 looks at various types of market failures and potential government actions to improve on the "free market" outcomes. These market problems include externalities, public goods, and common resources.

Detailed Program Topic List

Part I. Microeconomics principles review

- Demand Curve and Consumer Surplus
- Supply Curve and Producer Surplus
- Market equilibrium with perfect competition
- Excess supply and excess demand: price adjustment
- "Shifters" of supply and demand curves
- Supply curve shifts: impact on consumer and producer surplus
- Price elasticity of supply and demand
- Cross-price elasticity
- Income elasticity of demand
- Production costs
- Short-run profits and shut-down point
- Monopoly: basic outcomes with $MC=MR$

Part II. Consumer Theory

- Utility function--general introduction
- Marginal rate of substitution.
- Relative prices (the price of one good compared to another)
- Consumer budget constraint Budget constraint and an increase in income (how an increase of income will affect the budget constraint)
- Optimal consumer choice with price changes
- Optimal consumer choice (Indifference curves and budget constraint combined to illustrate consumer's "optimal choice" of two goods)
- Income and substitution effects
- Deriving demand curve from indifference curves
- Homothetic tastes
- Normal goods, inferior goods, and the Income expansion path.

Part III. Production theory

- Production function (general introduction)
- Ricardian and neoclassical production function
- Cobb-Douglas production function (introduction)
- Cobb-Douglas: constant returns, increasing returns, and decreasing returns forms
- Marginal productivity of factors
- Isoquant
- Marginal rate of technical substitution
- Wage rental ratio
- Factor markets: labor market and capital market
- Real wages
- Optimal choice of labor and capital (isoquant and isocost curves)
- Capital-intensive and labor-intensive goods (definitions)
- Wage-rental ratio changes and optimal use of labor and capital
- Wage-rental ratio (input prices) and relative output prices (relative production costs)

Part IV. Imperfect competition

- Monopoly markets
- Oligopoly markets
- Monopolistic competition basics:
- Cournot competition:
- Bertrand competition.
- First degree price discrimination:
- Perfect competition vs. monopoly vs. price discrimination:
- Segmented markets and price discrimination.
- Monopsony

Part V. General equilibrium

- Pure exchange model (Edgeworth box)
- Pareto efficiency, Pareto improvement
- Terms of trade
- Production possibilities frontier
- Ricardian model
- Neoclassical production possibilities frontier
- PPFs and social indifference curves

Part VI. Intertemporal choice

- Intertemporal budget constraint
- Intertemporal consumption equilibrium
- Interest rates and present value

Part VII. Analysis of government intervention

- Taxation: impact on markets
- Tax incidence
- Production and consumption subsidies
- Government price controls: price ceiling
- Government price controls: price floors

Part VIII. Market failures

- Pecuniary vs. non-pecuniary externalities
- Positive externalities
- Negative externalities
- Public goods
- “Tragedy of the Common”