

# PRODUCTION ECONOMICS

**Spiro E. Stefanou**  
**Pennsylvania State University**

Bruce R. Beattie and C. Robert Taylor, **The Economics of Production**, reprinted by Krieger Publishing Company; ISBN: 089464534X; reprint edition (January 1993)

C.A. Knox Lovell, "Production Frontier and Productive Efficiency," Chapter 1 in **The Measurement of Productive Efficiency: Techniques and Applications**, edited by Harold O. Fried, C.A. Knox Lovell, Shelton Schmidt, Oxford University Press, 1993.

Spiro E. Stefanou, **The Microeconomics of Dynamic Decisions**, unpublished lecture notes.

Other materials to be handed out.

## COURSE OUTLINE

### *Theory of Production*

- I. Technical Aspects of Production: The Production Functions
  - a. One-Product, One variable factor relationships
  - b. One Product, two variable factor relationships (then to the s-variable factor case)
  - c. Notes on functional forms and empirical studies
  
- II. Economic Aspects of Production: Factor Costs and Profit
  - a. The Input Perspective  
One product, two variable factors  
Least cost combinations, constrained output maximization, profit maximization factor demand functions, economic interdependence of factors, comparative statics of the cost minimization model, and economic regions of production  
One product, s-variable factors  
Functional Forms
  
  - b. The Output Perspective  
Cost Functions  
Revenue Functions  
Profit Maximization  
Product Supply Function  
Long-run and Short-run Cost Curves

### III. Multiple Output Production:

- a. Two Product, one allocable factor
- b. Multiproduct production with n-allocatable factors
- c. Relationship to Cost and Profit Functions

#### *Statistical and Measurement Issues*

### IV. Econometric Specification and Estimation

- a. Primal function estimation: estimation production functions
- b. Dual Function estimation: cost and profit functions as system
- c. Errors in optimization versus errors in measurement

### V. Firm Performance: Efficiency and Productivity

- a. Defining and measuring technical and Allocative inefficiency
- b. Productivity growth and technical change.

#### *Dynamic Theory of the Firm*

### VI. Theory of the Long Run and Dynamic Decision making

- a. Defining the dynamic production problem
- b. Microeconomics of dynamic decisions making.