



LEAD CITY UNIVERSITY
Faculty of Social and Management Sciences
Department of Economics

COURSE PARTICULARS

Course Code:	ECO 414
Course Title:	Industrial/ Production Economics
Number of Units:	2
Status:	Compulsory

LECTURER DETAIL

Name:	Dr. O. O. Ogunjimi
Qualifications:	B.Tech, M.Sc & Ph.D (Agric Econs)
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Area of Specialization:	Production, Resource Economics

COURSE DESCRIPTION

The nature, scope and methodology of production, economic production functions, one-input production function, two-input production function, product-product function, stages of production, optimum resource use, functional forms and their properties, factor proportions, input substitution, return to scale, expansion paths, homogenous production function, output elasticities of input, production surface, longrun cost curves, location of production and game theory, introductory linear programming.

COURSE OBJECTIVES

The objective of the course is to give students an applied knowledge of a segment of the microeconomic theory that has to do with production, as opposed to microeconomic theory as a whole. By this, students would have a keener and more specialized

knowledge of this segment of microeconomics and also be able to apply the knowledge to real life situation.

ASSESSMENT

Test - 30 marks

Exam - 70 marks

Total - 100 marks

TEACHING PLAN

Week	Topic
Week 1-2	<p data-bbox="508 789 1235 825">The nature, scope and methodology of production</p> <ul data-bbox="508 852 1138 1209" style="list-style-type: none">- Concept of production• Goals of production• The Field of production economics• Subject matter of production economics• Analytical tool of production economics• Tutorials
Week 2 -4	<p data-bbox="508 1308 959 1344">Economic production functions</p> <ul data-bbox="508 1371 1105 1791" style="list-style-type: none">• Use of production function concept• Structure and forms of production• Linear production, Quadratic Function• Power, Square root• Exponential, Transcendental• Cobb doglass, Homogenous• Tutorials

<p>Week 5-6</p>	<p>Industry production function</p> <ul style="list-style-type: none"> • Agricultural production function • Manufacturing production function <p>Process function</p> <ul style="list-style-type: none"> • Practical limitation on empirical production function • Tutorials
<p>Week 7-8</p>	<p>Production Relationships</p> <ul style="list-style-type: none"> • one-input production function • Two- input production function • Product-product Production Functions • Tutorials
<p>Week 9-10</p>	<p>Modifying relationship in production</p> <ul style="list-style-type: none"> • Changing Firm size and scale • Return to scale, • Output elasticities of input • Location of production • Expansion path, Optimum resource use and Production surface • Tutorial
<p>Week 11- 12</p>	<p>Long run cost curves</p> <p>Tutorials</p>
<p>Week 13- 14</p>	<p>- Production Planning: The Linear Programming Approach</p> <ul style="list-style-type: none"> • Nature and scope of LP

	<ul style="list-style-type: none"> • Data requirement of LP • Advantages and Limitations of LP • The Theoretical LP models • Tutorial
Week 15	Overall Revision

READING LISTS

Dwivedi D.N (2008). Managerial Economics. Seventh edition. VIKAS publishing House PVT LTD.

Olayemi J.K (2004) principles of Microeconomics for Applied Economic Analysis. SICO Publishers Ibadan, Nigeria

Dominic Salvatore (1996). Managerial Economics in a Global Economy. Third Edition. McGRAW-HILL Companies, Inc. America.

Olayide S.O and Heady E.O (1982). Introduction to Agricultural production Economics. Ibadan University Press.

TUTORIAL QUESTIONS

- (a) State the general principle of equi-marginal returns in production, pointing out the condition under which the principle is valid.

(b) Explain how isocline, ridgeline and expansion path can be used in explaining the three stages of production in factor-factor production relationship
- The following is a production function in two variable inputs, X_1 and X_2

$$q = 4.6X_1^{0.65} e^{0.65X_1} X_2^{0.20} e^{0.20X_2}$$

Find : i) The marginal physical product (MPP) of X_1 and X_2 at $q=10$, $X_1=4$ and

$$X_2=15 \text{ units}$$

- the marginal rate of technical substitution of X_1 for X_2 at $X_1=4$ and $X_2=15$
- the expansion path equation when the price of $X_1=N40.0$ per unit and that of X_2 is $N60.0$ per unit.

(b) write an essay on the meaning, purpose and limitations of process functions.

3. (a) Production economics and its analytical tools are only capable of solving problems of partial disequilibrium. Discuss.
(b) briefly write on advantages and limitations of linear programming
4. (a) Write briefly on the goals of production
(b) Production function is an outgrowth and logical exponent of the theory of the firm. Discuss this statement fully.

(c) Discuss briefly the meaning, nature and use of production functions
5. (i) The factor-product relationship is a simple format for evaluating the short-run input-output situation for any given firm product. Discuss. (ii) what are returns to scale and their relevant properties?
6. (a) Profit maximizing point is determined using the expansion path or outlay line in the factor-factor relationship. True, false or ambiguous. Discuss.
(b) write short note on process function.
7. (a) Account for the usefulness of factor-factor relationships in production economic analyses.
(b) how far will production function estimates shed light on the issues of scale?
8. Write briefly on the following terms
 - i) Expansion path
 - ii) Location of production
 - iii) Production possibilities curves
 - iv) Iso-revenue curves
 - v) Optimum resource use
9. i) Profit maximizing point is the same as revenue maximizing points in the product – product relationship. True, false or ambiguous. Discuss.
ii) profit maximizing point can be determined using production possibilities curves and iso-revenue curves. True, false or ambiguous. Discuss.
10. (a) Briefly compare and contrast the following :
 - i) Homogeneous production function and returns to scale
 - ii) Production elasticities and return to scale(b) What are the problems of using aggregate production functions as an instrument of policy?
11. i) The long-run total cost curve is directly derived from input expansion path. Discuss.
ii) Explain the relationship that exists among function coefficient, total cost elasticity and return to scale.
12. Given a production function

$$q = f(X_1, X_2)$$

- i) Derive the coefficient function measures
 - ii) Explain what a function coefficient measures
 - iii) Derive the cost elasticity and explain what it measures
- 13.** i) What is meant by Economies of scale ? Distinguish between internal and external economies of scale
- ii) What are sources of internal and external economies of scale of production?
- 14.** i) what is meant by diseconomies of scale? Why do diseconomies of scale arise ?
- ii) how do different diseconomies of scale affect the cost of production?
- 15.** (i) Given a production function of the square root form for a two –factor situation, derived the MRTS, MPP_i ($i=1,2$) and E_{pi}
- ii)) Given a production function of the semilog form for a two –factor situation, derived the MRTS, MPP_i ($i=1,2$) and E_{pi}

