

COURSE CODE:	AEM 201
COURSE TITLE:	Principles of Agricultural Economics
NUMBER OF UNITS:	2 Units
COURSE DURATION:	Two hours per week

COURSE DETAILS:

Course Coordinator:	Prof. S. Momoh <i>C.A.C., M.Sc., Ph.D.</i>
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Office Location:	Dept. of Agric Econs and Farm Mgt, COLAMRUD
Other Lecturers:	Dr. A.M. Shitu; B.Agric., M.Sc., Ph.D. Agric. Econs. Dr. A.E. Obayelu; B.Agric., M.BA., M.Sc., Ph.D.

COURSE CONTENT:

Understanding the basic concepts of economics and agricultural economics; know how and when a problem is an economic problem, how the discipline of agricultural economics started and the relationship between agricultural economics and the other disciplines of agriculture; meaning, types and laws of demand and supply; factors influencing the supply and demand for a commodity; meaning and types of elasticity and how they are measured; use of demand and supply analysis in agriculture; meaning of price and the various ways it can be determined; fixing prices in agriculture; meaning of utility; characteristics of utility; types/kinds of utility; cardinal and ordinal Utility; total utility, marginal utility, and the law of diminishing marginal utility; meaning of production, production functions and important resources involved in agricultural production; basic characteristics of the three stages of the production function and the Necessary and sufficient conditions for optimal inputs and products combination; meaning, structure and various forms of cost and cost functions; farm management – meaning – scope – objectives; agricultural finance – meaning - micro versus macro finance – need for agricultural finance; agricultural marketing – meaning- importance of agricultural marketing- criteria for categorizing markets - marketing and conditions for efficient marketing- types of marketing function - problems of agricultural marketing; understand the meaning of agricultural linkages : vertical/horizontal integration; agricultural cooperative- meaning- importance of agricultural cooperatives- types – formation of agricultural cooperatives and problems; meaning of model and how to formulate models and its applications in agriculture.

COURSE REQUIREMENTS:

This is a compulsory course for all agricultural students in 200 level. A minimum of seventy-five percent (75%) class attendance is required as qualification of writing the exam. Students will be evaluated by their attendance, performance in Continuous assessment Test (CAT) and exam.

The probability of doing quiz during a lecture equals 1 if the population in the class is found scanty.

READING LIST:

- 1 Adegeye, A.J. and Dittoh J.S (1985): Essentials of Agricultural Economics. CARD
- 2 Anderson, D. J. (1981) Economics of West Africa. Macmillan Publishers.
- 3 Doll, J. P. and Orazen, P (1978) Production Economics Theory with Application. John Wiley and Sons Incorporated.
- 4 Desai, P.K. (2010), Agricultural Economics, Biotech Books, Delhi, India.
- 5 Colman D. and Young T. (1989): Principles of Agricultural Economics: Markets and Prices in Less Developed Economy. Cambridge University Press, United Kingdom.
- 6 Kohls, R. L. (1970) Marketing of Agricultural Products. Macmillan Publishers, New York.
- 7 Rhodes, V. James; Jan L. Dauve and Joseph L Parcell(2007) The Agricultural Marketing System; Holcomb Hathaway, Publishers, Inc.
- 8 Olayide, S.O. and Heady E.O. (1982): Introduction to Agricultural Production Economics. University Press, Ibadan. University of Ibadan.
- 9 Koutsoyiannis, A. (1980) Modern Microeconomics. Macmillan Press Ltd London.
- 10 Warren F. Lee et al(1988), Agricultural Finance. Iowa State University Press, Iowa50014.
- 11 Martin O Ijere and Aja Okorie (eds); Readings in Agricultural Finance.Longman Nigeria Plc.

LECTURE NOTES

Week 1: Working through Principles of Agricultural Economics

Each topic in this course contains self assessment exercises to test students understanding. Students' attendance is very important and will be rated as part of CAT. There will be up to two impromptu tests and one final and planned test all carrying 30 marks. At the end of this course, there will be a final examination carrying 70 marks. We therefore advice that students attend classes and find opportunity of comparing knowledge with their colleagues

Scope and Nature of Agricultural Economics

- Meaning and scope of Economics and Agricultural Economics

Introduction to principles of agricultural economics is a two unit degree course available to all students offering agriculture and agriculture related courses at the University of Agriculture Abeokuta. Many nonagricultural economics students think that economics has no place in the study of agriculture and agricultural science. They believe that since agriculture is mainly concerned with provision of food the emphasis should therefore stop at the level of increased production. Agricultural economics is the application of economic principles to the operations of the agricultural industry. The study of agricultural economics has enabled us to know what to do, not only to ensure increased agricultural production, but, also how to produce profitably, productively and efficiently. It also teaches how to ensure the agricultural products get to the final consumers in the place and form they want it at affordable prices.

- Assignment:**
- (1) What are the differences and similarities between economics and agricultural economics?
 - (2) Why is Agricultural Economics an important discipline in the Agricultural Science study?
 - (3) What is the difference between agricultural economics and other disciplines in agriculture?

Week 2: Theory of Demand and Supply

- Theory of Demand and applications
 - ✓ Meaning of Demand
 - ✓ Individual Demand
 - ✓ Market Demand
 - ✓ Law of Demand
 - ✓ Demand curve
 - ✓ Slope of the Demand Curve
 - ✓ Factors Influencing the Demand for a Commodity
 - ✓ Shifts in Demand

- Theory of Supply and applications
 - ✓ Meaning of Supply
 - ✓ Individual Supply
 - ✓ Market Supply
 - ✓ Law of Supply
 - ✓ Supply curve
 - ✓ Slope of the Supply Curve
 - ✓ Factors Influencing the Supply for a Commodity.
 - ✓ Shifts in Supply

Demand for a good or service is the quantity the consumer is prepared to buy of the good or service at a particular price. Demand is a desire backed up with the ability to pay for the good or service in question, thus it is not a wish.

There are two types of demand; individual demand and market demand.

While demand is very important in the analysis of the consumer behaviour, supply is also equally important. In the demand analysis, we have seen that the demand is the amount of a commodity that would be bought at a price. We have not yet seen what the actual price will be. To do so we must first look at the supply of the commodity.

Week 3: Concepts of Elasticities of Demand and Supply and the applications

- Meaning of Elasticity
- Measurement of Elasticity
- Elasticity of Demand
 - ✓ Price elasticity of Demand
 - ✓ Basic Determinants of Price Elasticity of Demand
 - ✓ Types of Price Elasticity of Demand
 - ✓ Uses of Price Elasticity of Demand
 - ✓ Income Elasticity of Demand
 - ✓ Basic Determinants of Income Elasticity of Demand
 - ✓ Uses of Income Elasticity on Demand
 - ✓ Cross Elasticity of Demand
 - ✓ Uses of Cross Elasticity
- Elasticity of Supply
 - ✓ Types of Elasticity of Supply
 - ✓ Factors affecting elasticity of supply
- Demand and Supply Analysis in Agriculture

The concept of elasticity is to show the type of relationship existing between quantities of commodity and the factors that affect the demand and supply as both quantity and any of these factors change.

Price Theory

- Meaning of Price
- Price Determination
- Market Price and Normal Price
- Stable Equilibrium Analysis

In the previous modules, we have analysed the forces of demand and supply in the two previous units. We have seen that according to the laws of demand and supply, more is supplied at a high price while less is demanded, but at a low price the opposite is the case; less is supplied but more is demanded. From these two laws, we should see that there will be a price. Goods have prices because they are useful and scarce. Free goods do not have prices because they are not scarce.

- Assignment:**
- (1) Why is the slope of the demand curve negatively sloped?
 - (2) Explain and give examples of demand shifters
 - (3) Explain the difference between movement along the supply curve and shift in the supply curve. Give examples of factors in each case
 - (4) When is the elasticity of demand greater than unity?
 - (5) "The demand for salt is perfectly inelastic" Explain what you understand by this statement, and give reasons why it is probably true.

Week 4-5 : Consumer Theory and Utility Maximization

- Preferences and Utility
 - ✓ Preference
 - ✓ The utility function
 - ✓ Kinds of utility
- How do neoclassical economists model consumer behavior?
 - ✓ Theory of Utility maximization
 - ✓ Assumptions of the theory
 - ✓ Indifferent curves and indifferent map
 - ✓ Budget constraint
 - ✓ Explain the meaning of total utility, marginal utility, and the law of diminishing marginal utility
 - ✓ Total willingness to pay and marginal willingness to pay
- Measurement of utility
 - ✓ The cardinal approach
 - ✓ The ordinal approach
- How rational consumers compare marginal utility-to-price ratios for products in purchasing combinations of products that maximize their utility
- Criticisms of the theory of utility maximization
- How a demand curve can be derived by observing the outcomes of price changes in the utility-maximization model.
- How the utility-maximization model helps highlight the income and substitution effects of a price change.

People stay in business by attracting and retaining customers. They do this by engaging in exchanges of resources including information, money, goods, services, status, and emotions

with consumers, exchanges that both businesses and customers perceive to be beneficial. When companies ask, who are our customers? How do we reach them? What should we sell to them? What will motivate them to buy? What makes them satisfied? They are asking questions that require understanding of consumer behaviour. This unit provides a brief insight into the meaning and perspective of Consumer behaviour as well as understanding why it is important to study consumers.

Having gone through the theory of demand and supply, elasticity and price determination, it is imperative to analyse the main properties of consumer preferences and choices and how consumers allocate income to purchase different goods.

Assignment: (1) Why does a consumer buy a particular bundle of goods and services rather than others? Examining these issues will help us understand consumer behavior and the law of demand

Week 6-7: Theory of Production

- Meaning of Production
- Production Function
- Production Relationships – Factor –Product Relationship
 - ✓ Meaning of Production Relationship
 - ✓ Stages of the production function curve
 - ✓ Mathematical Interpretation of the Three Stages of Production
 - ✓ Optimal Input Combination
- Production Relationships – Factor – Factor Relationship
 - ✓ Important Economic Parameters of Factor-Factor Relationship such as isoquant, Marginal Rate of Input Substitution (MRIS) and types of marginal rate of input substitution (MRIS)
 - ✓ Optimal Inputs Combination and Profit Maximization under Factor – Factor Relationship
- Production Relationships – Product–Product Relationship
 - ✓ Meaning of Product-Product Relationship
 - ✓ Production Possibility Curve (PPC)
 - ✓ Marginal Rate of Product Substitution (MRPS)
 - ✓ Relationship among Products. Types of Products
 - ✓ Optimal Product Combination and Profit Maximization under Product-Product Relationship
 - ✓ Profit Maximization - A Mathematical Example

Production is synonymous with creating something. Economist does not restrict production to the manufacture of commodities; he also takes the expression to include the provision of services such as those of Doctor, Lawyer, Accountant, Actor, Musician, or Market women. The central aim of all production is to satisfy people' s wants and increase the economic welfare of a people, to raise their standard of living by enabling to satisfy more fully a greater number of their wants.

Assignment: (1) Why is labour and entrepreneur the most important resources in production?

- (2) What is the difference between production and production function?
- (3) Why is the power function preferred over other functional forms of the algebraic representation of the production function?
- (4) Consider the production function of the form:

$$Y = 10 + 5X - 0.2X^2$$

Where, $Y = \text{Output(kg) / ha}$ and $X = \text{Input(kg) / ha}$

- a) Derive the MP and AP functions
- b) Determine the value of X at which
 - (i) Y is maximum
 - (ii) $AP = MP$
 - (iii) MP is maximum
- (5) Write brief notes on (i) Least cost combination of inputs in factor-factor production relationship (ii) Marginal rate of inputs substitution (iii) Substitutes and complementary inputs
- (6) Write brief notes on: (i) Competitive products and Complementary products (ii) Supplementary products and Joint products (iii) Marginal rate of product substitution (iv) Product possibility curve

Week 8:

Theory of Costs

- Meaning of Cost
- Forms of Costs
- Measurement of Cost
 - ✓ Measures of Cost
 - ✓ components of the classical measure of cost
 - ✓ differences among total, variable and fixed costs
- Agricultural Cost Functions
 - ✓ Shape of the Cost Functions
 - ✓ Analysis of Cost Functions
 - ✓ Relationship between Average Total Cost and Average Variable Cost.
 - ✓ Derivation of Cost Functions from a Production Function

There are expenses incurred on inputs used in the production of specified units of a product. It could be the expenses on procuring labour, fertilizer, depreciation, land and so on to produce a specified unit of a product. Knowing the meaning of cost is one important concept because costs are different from the perspectives of people employing them. It is equally very important to have thorough knowledge of the cost function before we can do any meaningful economic analysis.

- Assignment:**
- (1) Differentiate among these forms of costs: Accounting cost, Opportunity cost and Private cost.
 - (2) Distinguish between total, variable and fixed costs in farm business
 - (3) Distinguish between average and marginal costs in farm business
 - (4) Why is the variable cost curve always below the total cost curve?

Week 9:

Farm Management – Meaning – scope – Definitions- Objectives

Farm management is defined as the science that deals with organization and operation of the farm in the context of efficiency and continuous profits. Farm management is a branch of agricultural economics, which deals with wealth earning and wealth spending activities of farmer in relation to the organization and operation of the individual farm unit for securing maximum possible net income.

Week 10:

Agricultural finance – Meaning – Definitions – micro versus macro finance –need for agricultural finance

Agricultural finance generally means studying, examining and analyzing the financial aspects pertaining to farm business, which is the core sector of the country. The financial aspects include money matters relating to production of agricultural products and their disposal.

According to Lee (1988) Agricultural Finance is the economic study of the acquisition and use of capital in agriculture. It deals with the supply of and demand for funds in the agricultural sector of the economy.

- Meaning and scope of Agricultural finance
- Role of credit in agricultural development.
- Classification of agricultural credit.
- Some approaches to the supply of agricultural credit.
- Time value of money.

Week 11: Agricultural Marketing

Food marketing encompasses the business activities in the flow of food products and services from producers to consumers. The food marketing system is a complex and expensive network of channels, middle men, and marketing activities which facilitates the production, distribution and exchange of the nation's food supply.

- Markets and Marketing.
- Role of Agricultural marketing in development
- Market Structure, Conduct and Performance
- Marketing Functions.
- Marketing Channels, Marketing Chains.

The analysis of demand and supply has made us to know what happens to the goods and services produced for the needs of the consumer. The environment in which the forces of supply and demand operate is the market. The term, agricultural marketing implies selling of goods and services by the farmers and ranchers. It includes various functions viz., assembling, transportation, storing, buying, selling, standardization, grading, processing, sales promotion, etc.

- Assignment:** (1) Why is market important in economic study?
(2) Identify the three criteria for classifying markets and write on their characteristics giving examples in each case.
(3) Why is the marketing of agricultural products unique?
(4) Write brief notes on the physical and exchange functions of the marketing functions

Week 12: Agricultural cooperatives – Meaning – Objectives – characteristics - types – formation of agricultural cooperatives – problems of agricultural cooperatives

An agricultural cooperative, also known as a farmers' co-op, is a cooperative where farmers pool their resources in certain areas of activity. A broad typology of agricultural cooperatives distinguishes between agricultural service cooperatives, which provide various services to their individually farming members, and agricultural production cooperatives, where production resources (land, machinery) are pooled and members farm jointly. In other words, agricultural cooperative is an association of people who join together to engage in the production of agricultural products.

Agricultural cooperatives play an important role in marketing agricultural crops. A cooperative structure serves to provide agricultural producers the opportunity to process and market their crops in a joint business venture with other producers. Producer cooperatives provide uniformity in quality by inspection during production, at harvest, and upon delivery. Uniform preparation of a commodity for a buyer can also be achieved, as can minimization of the numbers of farmers with whom a commodity purchaser must do business.

The origin and principles of co-operatives, Types of cooperatives,

- Organization of cooperatives in Nigeria
- Financing of agricultural cooperatives in Nigeria

- Financial requirements of cooperative societies
- Sources of finance for cooperatives
- Problems of cooperatives.

Additional benefits of cooperatives are;

- arranging timing and scheduling of delivery;
- assigning transportation and delivery costs;
- setting delivery location; and
- securing prices.

Week 13: Agricultural linkages

- Horizontal integration
- Vertical integration

Farmers/ Firms can gain greater control over prices in a market in two major ways. The first is called horizontal integration and the other method is called vertical integration. This unit will discuss the two methods in detail.

Assignment: (1) What is the difference between horizontal and vertical integration?
(2) How can horizontal and vertical integration lead to larger companies?
(3) Are there differences between horizontal concentration and vertical integration?

Week 14: Model formulation and Applications in Agriculture

- Meaning of models
- Types of model and the applications in agriculture
- Steps in formulating models
- Application of models in agriculture using the linear programming model for demonstration

A model is an abstraction and generalizations of reality. It can be in physical form, mathematical form etc. Economic models help us to understand economic phenomenon so that we can explain and possibly predict a recession, a period of inflation, and other important economic events. We have mathematical models such as the Linear Programming model which this module will introduce to students.

Assignment: (1) What is the relevance of models in agriculture?