Course Code: **AEM 201**

Course Title: **PRINCIPLES OF AGRICULTURAL ECONOMICS**

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Course Aims

The course aims to provide an introductory insight into the field of agricultural economics with a view to prepare the student for a future career in agricultural economics.

Course objectives

At the end of the course, students should be able to

- Understand 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
- Meaning of utility
- Learn about total utility, marginal utility, and the law of diminishing marginal utility.
- The 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
- Meaning and importance of markets and criteria for categorizing markets
- Marketing and conditions for efficient marketing
- Meaning and types of marketing functions
- Major problems of agricultural marketing
- Understand the meaning of agricultural linkages : vertical/horizontal integration
- The meaning of model and how to formulate models

Working through the course

Each topic in this course contains self assessment exercises to test student understanding. Student 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

Suggested Textbooks and references

1   Adegeye A.J and Dittoh J.S (1985): Essentials of Agricultural Economics. CARD Anderson, D. J. (1981) Economics of West Africa. Macmillan Publishers.

2   Doll, J P and Orazen, P (1978) Production Economics Theory with Application. John Wiley and Sons Incorporated.

3   Kohls R L (1970) Marketing of Agricultural Products. Macmillan Publishers, New York.

4   Olayide, S.O and Heady E.O (1982): Introduction to Agricultural Production Economics. University Press, Ibadan. University of Ibadan.

5   Koutsoyiannis A (1980) Modern Microeconomics. Macmillan Press Ltd London.

Course Outline

Week 1:   Scope and Nature of Agricultural Economics

- Meaning and scope of Economics and Agricultural Economics

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

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

Week 4: Price Theory

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

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 5 and 6:   **Consumer Theory and Utility Maximization**

- Preferences and Utility
  - ✓ Preference
  - ✓ The utility function
- 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.

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 7 and 8:   **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

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 = Output(kg) / ha and X = 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 9 - 10: **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

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 11 -12:   **Agricultural Marketing**

- Definition of Market
- Conditions for a Market to Exist
- Types of Markets
- Marketing Functions
- Marketing of Agricultural Products
- Importance of Efficient Markets
- Criteria for Categorizing Markets
- Degree of Competition
  ✓ Perfect Markets
  ✓ Imperfect Markets
  ✓ Cases of Imperfect Markets
- Volume of Trade
  ✓ Retail Market
  ✓ Wholesale Market
  ✓ International market
- Problems of Agricultural Marketing

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 13:   **Agricultural linkages**

- Horizontal integration
- Vertical integration

Assignment: (1) What is the difference between horizontal and vertical integration?

(2) How can horizontal and vertical integration lead to larger companies?

(3) Are their differences between horizontal concentration and vertical integration?

Week 14:   **Model formulation and Applications**

- Meaning of models
- Types of model and the applications in agriculture
- Steps in formulating models

Assignment: (1) of what relevance are models to agricultural economist?

WEEK 1:   THE NATURE AND SCOPE OF AGRICULTURAL ECONOMICS

INTRODUCTION

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.

WEEK 2:   **DEMAND THEORY**

INTRODUCTION

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.

SUPPLY THEORY

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:   **THE CONCEPT OF ELASTICITIES**

INTRODUCTION

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.

WEEK 4:   **PRICE THEORY**

INTRODUCTION

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.

WEEK 5 AND 6:   **CONSUMER BEHAVIOURS AND UTILITY MAXIMIZATION**

INTRODUCTION

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.

WEEK 7 AND 8: PRODUCTION THEORY

INTRODUCTION

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.

WEEK 9 AND 10: THEORY OF COSTS

INTRODUCTION

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.

WEEK 11 AND 12:   **AGRICULTURAL MARKETING**

INTRODUCTION

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. This lecture therefore looks at the concept of market.

WEEK 13:   **AGRICULTURAL LINKAGES**

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.

WEEK 14:   **MODELS AND ITS APPLICATIONS IN AGRICULTURE**

A model is an abstractions 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.