



SCHOOL OF VOCATIONAL AND TECHNICAL EDUCATION

DEPRATMENT OF AGRICULTURAL EDUCATION

THE HEAD OF DEPARTMENT

Obele Igoni Tadie (Ph.D), A Senior Lecturer, is the Current Head of the Department of Agricultural Education. He holds a Doctorate Degree in Agricultural Education and Community Development from the Rivers State University, Nkpolu Port Harcourt in 2023, After Obtaining a Masters Degree (Ms.c) in the same field from the same University in 2018. Also from the same University, He obtained His Bachelor's Degree Agricultural Education (Bs.c Ed.) in 1998. Dr. Igoni, Obele got His first Appointment with the Bayelsa state College of Arts and Science, presently Isaac Jasper Boro College of Education, as Administrative Officer in 2003. He has attended several conferences and Authored several local and international journals in Agricultural Education and related discipline. He is a

licensed Teacher, registered with the Teachers Registration Council of Nigeria (TRCN) and a Member of other Professional bodies in Nigeria.

ACADEMIC STAFF OF THE DEPARTMENT

S/N	NAME	SEX	PRESENT RANK	ACADEMIC QUALIFICATION	AREA OF SPECIALISATION
1.	DR. AYAWARI DADI T.	M	CHIEF LECT	FSLC 1972; GCE 1978; GCE 1982; B.SC ^(2nd Class Lower) (AgricEcons)198; M.SC(Agirc. Ecos) 1997; PH.D 2017	AGRIC. ECONS.
2.	AMBAH BINAEBI	M	CHIEF LECT	FSLC 1980; WASC 1985; WASC 1986; B.SC (2nd Class Lower) (CROP SCI) 1995; M.PHIL (ENVIR MGT) 2002	CROP SCIENCE
3.	Dr. GBARABE ROLAND	M	PRIN. LECT	FSLC 1982; WASC 1988; NCE (AGRIC SCI) 1991; B.SC.ED ^(2nd Class Lower) (AGRIC EDUC) 1995; M.SC (AGRIC EXT)2000; PH.D (AGRIC. EXTENSION) 2018	AGRIC. EXTENSION
4.	DR. NGODIGHA SABINA ALATARI	F	PRIN. LECT.	FSLC 1981; WASC 1987; B.SC (2nd Class Lower) (Fish)1995; M.SC (FISH) 2007; PH.D (Envl. Biology) 2018	FISHERIES
5.	NEMINE EREKPOKEME LUCIA	F	SNR LECT	FSLC 1985; SSCE 1991; B.SC ^(2nd Class Lower) (AGRIC) 1998; M.SC (Agric Ext&Rural Devt) 2012	CROP SCIENCE

6.	SIMEON PRINCEWILL OKPOITARI	M	SNR LECT	FSLC 1988; SSCE 1995; B.SC ^(2nd Class Lower) (SOIL SCI) 2002; M.SC (SOIL SCI) 2010; PGDE 2011	SOOIL SCIENCE
7.	Dr. WENIBO ANDREW	M	PRIN. LECT.	FSLC 1988; WASC 1994; B.SC ^(2nd Class Upper) (SOIL SCI)2004; M.SC (SOIL SCI) 2012;PH.D (SOIL SCI) 2023	SOIL SCIENCE
8.	Dr. IGONI, OBELE .T.	M	SNR LECT	FSLC 1985; GCE 1989; B.SC. Ed ^(2nd Class Lower) (Agric Educ)1998; M.SC (Agric Educ) 2018; PH.D (Agric Edu.) 2023	AGRIC. EDU.
9.	MOROYEI EBILADE	M	LECT.I	FSLC 1986; SSCE 1992; SSCE 1993; NECO 2000; NCE (Agric) 1998; B.Sc ^(2nd Class Lower) (Crop. Mgt) 2012; M.SC 2021	AGRIC. EXTENSION
10.	OMU, PAUL BINAEBI	M	LECT. I	WASC 1984; SSCE 2009; CERTIFICATE (VOTECH AGRIC) 1986; HND ^(Lower credit) (ANIM HEALTH TECH) 1997; PDGE 2013; PDG (ANIM SC.) 2008; M.SC (ANIM SC.&FISHERIES) 2017	ANIMAL SCI.
11.	AKPOLU, EBITARI SYLVANUS	M	LECT. I	FSLC 1988; WAEC 1995; B.ED ^(2nd Class Lower) (AGRIC SC) 2001; M.SC (ANIMAL PROD) 2013;	ANIMAL SCI.
12.	DR. AKPOEBI G.	M	LECT. I	PH.D (AGRIC. EDU.)	AGRIC . EDU..

National Certificate of Education (NCE) Programe
Course Codes and Titles

	Year One – First Semester		
Course Code	Course Title	Contact Hours L-T-P	Credits
VTE 110	Introduction to Vocational & Technical Education	1-0-0	1C
AGE 111	Introduction to Agriculture	1-0-3	1C
AGE 112	Agricultural Biology	2-0-3	1C
AGE 113	Agricultural Mathematics	1-1-0	1C
AGE 114	Agricultural Physics	1-0-3	1C
AGE 115	Introduction to Agro-Climatology	1-0-3	1C
AGE 116	Agricultural Chemistry	1-0-3	1C
AGE 117	Practical Agriculture I	0-0-3	1C
	GSE COURSES		
GSE 000A	Media Information Literacy		
GSE 111	General English I		1C
GSE 112	Introduction to Library Studies		1C
	TOTAL		10C

	Year One – Second Semester		
Course Code	Course Title	Contact Hours L-T-P	Credits
AGE 121	Principles and Practice of Crop Production	1-0-3	2C
AGE 122	Introduction to Animal Science and Nutrition	2-0-3	2C
AGE 123	Introduction to Extension and Youth Organization in Agriculture	2-0-3	2C
AGE 124	Principles of Agricultural Economics	1-0-3	1C
AGE 125	Curriculum Development and Agricultural Methods	2-0-3	2C
AGE 126	Introduction to Soil Science	2-0-3	2C
	GSE COURSES		
GSE 000B	Media Information Technology		
GSE 121	General English II		1C
GSE 123	Introduction to Computer Studies I		1C
GSE 124	Family Life & Emerging Health Issues		1C
	Total		14C

	Year Two – First Semester		
Course Code	Course Title	Contact Hours L-T-P	Credits
AGE 211	Tree Crop Production	1-0-0	2C
AGE 212	Poultry Production	1-0-3	1C
AGE 213	Introduction to Genetics	1-1-3	1C
AGE 214	Agricultural Development Policy and Finance	2-0-0	2C
AGE 215	Farm Power and Machinery	1-0-3	1C
AGE 216	Fish Production	2-0-3	1C
AGE 217	Entrepreneurship in Agriculture	1-0-3	2C
	GSE COURSES		
GSE 000C	Media Information Technology		
GSE 211	General English III		1C
GSE 213	Introduction to Computer Studies II		1C
GSE 214	Trafficking in Persons Issues		1C
	Total		13C

	Year Two – Second Semester		
Course Code	Course Title	Contact Hours L-T-P	Credits
AGE 221	Research Methods in Agricultural Education	1-0-0	1C
AGE 222	Land Survey and Farmstead Planning	1-0-3	1C
AGE 223	Principles of Crop Protection	1-0-3	1C
AGE 224	Crop Improvement	1-0-3	1C
AGE 225	Livestock Production I (Ruminants)	1-0-3	2C
AGE 226	Principles of Farm Management	1-0-3	1C
AGE 227	Practical Agriculture II and Field Trip	0-0-3	1C
AGE 228	SIWES	2-0-4	2C
	GSE COURSES		
GSE 000D	Media Information Technology		2C
GSE 221	General English IV		1C
GSE 223	Citizenship Education		1C
GSE 224	Entrepreneurship		1C
	Total		15C

	Year Three – Second Semester		
Course Code	Course Title	Contact Hours L-T-P	Credits
AGE 321	Environmental Education in Agriculture	2-0-3	1C
AGE 322	Animal Health	1-0-3	1C
AGE 323	Livestock Production II (Non-Ruminants)	2-0-3	2C
AGE 324	Animal Breeding	1-0-3	1C
AGE 325	Horticulture	2-0-3	2C
AGE 326	Agricultural Marketing and Cooperatives	1-1-0	1C
AGE 327	Beekeeping/Snail/ Cane Rat Farming	1-0-3	1C
	GSE COURSES		
GSE 322	General English V		1C
GSE 323	Science and Technology in Society		1C
GSE 324	Political Economy		1C
	Total		12C

Course Description

VTE 110 Introduction to Vocational and Technical Education 1C

- Definition, Scope, Philosophy Objectives and Characteristics of Vocational and Technical Education
- Role and Development of Vocational and Technical Education in Nigeria National Development
- Place of Vocational and Technical Education in the UBE Scheme

- Problems and Prospects of Vocational and Technical Education in Nigeria
- Vocational Associations, Organizations and organs

AGE 111 Introduction to Agriculture

1C

- Meaning, scope and importance of Agriculture.
- General concepts and terms used in soil, crop, animal, economics and extension.
- Brief history of Agricultural Development in Nigeria and the World.
- Types of farming, World-farming systems and systems of land ownership.
- Agriculture and the natural environment, e.g. forest, deforestation, reforestation, afforestation, soil erosion, irrigation and drainage
- Problems and role of Government in agricultural development in Nigeria.
- Use of basic farm tools and Science and Technology in Agriculture.
- Principles and practices of nomadic agriculture

- Forms of agriculture: crop farming, horticulture, livestock farming, apiculture, fish production, snail farming, forest and forest uses
- Employment opportunities in agriculture.

AGE 112 Agricultural Biology

1C

- Definition of Agricultural Biology.
- Basic relationships between plants and animals
- Cell structure and functions.
- Cell division (mitosis & meiosis) as basis for continuity of life
- Classification of plants and animals.
- Identification of plant and animal species of Agricultural importance.
- Osmosis, diffusion and plasmolysis.
- Transportation and translocation in plants.
- Photosynthesis: definition, factors influencing, agricultural importance and strategies for enhancing photosynthesis.
- Fruits and seed dispersal.
- Germinating process and conditions.

- Photoperiodism and its impact on growth and development of plants.
- Environment and food chains: population and ecosystem in relation to growth and development of crops.
- Aquarium - definition, principles and importance.

AGE 113 Agricultural Mathematics

1C

- Units of measurements,
- Calculation of areas and volumes.
- Arithmetic and geometric progressions.
- Simple simultaneous and quadratic equations.
- Elementary trigonometry and co-ordinate geometry.
- Graphs and their mathematical applications in agriculture
e.g. plant population and yield studies.

AGE 114 Agricultural Physics

1C

- Properties of matter.
- Introduction to motion, force, Friction, machines, levers, adhesion, cohesion, viscosity, surface tension, elasticity.
- Energy and conservation laws.
- General principles of heat, light, electricity and magnetism.

AGE 115 Introduction to Agroclimatology**1C**

- Meaning and scope of agroclimatology, elements of climate and weather. Equipment used in agroclimatology
- Effect of Climatic factors (temperature, precipitation, relative humidity, wind, solar radiations, cloud cover) on agriculture.
- Ecological zones of Nigeria and their effect on ecological distribution of crops, livestock and soil formation.
- Principles underlining weather forecasting.
- Climate change and Agriculture

AGE 116 Agricultural Chemistry**1C**

- The nature of matter - elements, mixtures and compounds
- Basic treatment of atomic, molecular and ionic theories
- Conditions affecting chemical change such as equilibrium, catalysis, enzyme action.
- Water, air and their uses.
- General properties of elements in the Periodic Table
- Types of chemical bonds, octet rules.
- Characteristics and significant reactions of metal and non-metals.

- Acids, Bases and Salts.
- Introduction to the rules of IUPAC nomenclature of organic compounds

AGE 117 Practical Agriculture I

1C

- School Farm layout, allocation and maintenance of individual/group farm plots and pens to care for crops and farm animals.
- Identification of basic farm tools used in crop and animal farms; their uses, care and maintenance.
- Keeping of simple farm records and diaries.
- Land preparation in nursery practices
- Caring for young, growing and mature animals.
- Care of plants before and after planting/transplanting and care of animals after parturition and brooding.

AGE 121 Principles and Practice of Crop Production 2C

- Meaning and aims of crop production
- Genetic and environmental factors affecting crop production
- Classification and uses of crops

- Cultural practices involved in crop production (pre-planting, planting and post planting practices, including harvesting and post harvesting practices)
 - Husbandry of selected arable crops e.g. cereals, legumes/pulses, roots and tubers and fibre crops
- Major crop pests and diseases affecting each arable crop (control must be emphasized)

AGE 122 Introduction to Animal Science and Nutrition 2C

- Meaning and Scope of Animal Science and Nutrition
- Classification of Livestock
- Types and breeds of farm animals
- Anatomy and physiology of selected farm animals
- Livestock policy in the national development plan
- Contribution of farm animals to peasant farming
- Problems and prospects of livestock production in Nigeria
- Classification of feedstuff and their nutrient compositions (water, carbohydrate, protein, lipids, vitamins and minerals: their functions, uses and sources)
- Study of enzymes, hormones, co-enzymes, antibiotics and feed additives.

- Types of animal rations

AGE123 Introduction to Extension and Youth Organization in Agriculture 2C

Concept of Agricultural Extension

- Principles of Agricultural Extension
- Qualities and Duties of Extension worker
- Problems of Agricultural extension
- Definition of Rural Sociology and its importance
- Sociology as a Social Science, Social organizations and its characteristics, Social processes
- Rural-urban differentials
- Communication, Diffusion and Adoption processes in Agriculture
- Concept and Objectives of Youth organization in Agriculture
- Guidelines for establishing in-school/out-of-school Agricultural Youth Organizations and Clubs
- Structure of Youth Clubs in schools
- Youth Club activities and projects in schools

AGE 124 Principles of Agricultural Economics

1C

- Meaning and concept of Economics and Agricultural economics
- Demand and supply for agricultural goods and services
- Elasticity of demand and supply
- Theory of production
- Production functions (input-output, input-input and output-output relationships) as they relate to agricultural production
- Analysis of cost and their implications in agricultural production
- Concepts of macro-economic: Gross Domestic Product (GDP), Gross National Product (GNP)
- Income distribution and circular flow of income; labour – salaries/wages, capital-interest and management-profit.

AGE 125 Curriculum Development and Agricultural Methodology

2C

- Meaning scope and types of Curriculum
- Curriculum processes and evaluation in Agricultural education
- Drills in curriculum design in Agriculture,
- Curriculum Agencies in Nigeria.

- Critique of the curriculum for Primary and Junior Secondary Agriculture
- Definition of Effective Teaching
- Characteristics and qualities of a good Agricultural Science teacher
- Teaching methods in Agriculture
- Classroom, field/practical and laboratory management
- Avoidance and treatment of accident on the field and laboratory
- Application of ICT in the teaching of Agriculture

AGE 126

Introduction to Soil Science 2C

- Definition of Soil, soil minerals and their uses
- Types of rock and mineral, rock formation and weathering
- Factors influencing Soil formation
- Laboratory practical in determining soil composition
- What is soil fertility
- Chemical, physical and biological dynamics of soil fertility
- Basic concept of plant nutrition (Essential plant nutrients: Macro and Micro nutrients)

- Fertilizer types, methods of application, rate of application and their effect on soil and plant growth
- Erosion, Irrigation, Drainage and their importance in Agricultural production

Year Two – First Semester

AGE 211 Tree Crop Production

2C

- Meaning and importance of tree crop production.
- Botany, culture, harvesting, processing and storage, marketing and utilization of major tropical tree crops such as: Cocoa, oil palm, cashew, coffee, kola, Shea-butter, rubber, mango, citrus, coconut, gum Arabic, neem tree and date palm.
- Problems and prospects of tree crop production in Nigeria.

AGE 212 Poultry Production

1C

- Poultry production (meaning, scope, and purpose),
- Systems of poultry keeping
- Brooding and rearing of chicks, management of broilers and growers, management of layers and breeders.

- Handling, care, grading and candling. Incubators and incubation process. Feeds and feeding.
- Hatchery management and Record keeping in poultry.

AGE 213 Introductory Genetics

1C

- Genetics (meaning, scope, principles and application)
- Early conceptions about heredity (Pre-Mendelian genetic theories)
- Mendelian Genetics, Chromosomes and Sex Inheritance
- Genetic variability and heritability
- Basic definition of population genetics.
- Basic concepts in genetic engineering, mutation and eugenics.

AGE 214 Agricultural Development, Policy and Finance

2C

- The Concepts of growth and Development
- Theories of Agricultural Development
- Rural Development Policies, Strategies and Models
- Community Development Policies, Strategies and Models
- Trends in Development of Agriculture in Nigeria

- Meaning and Scope of Agricultural finance
- Sources of Farm Financing
- Agricultural Credits and Implications
- The effects of Taxes and subsidies on Agricultural finance
- Capital finance

AGE 215 Farm Power and Machinery

1C

- Meaning, types and sources of farm power.
- Farm power ratings and units of measurement of force, work, energy and power.
- Brief description of an internal combustion engine.
- Objectives and Scope of agricultural engineering.
- The tractor services and maintenance, description and uses of Power-take-off-shaft (PTO).
- Brief description, functions and maintenance of tillage, cultivating, planting, fertilizing, processing and storage equipment and implements such as: mould-board, disc-plough, harrows, ridgers, inter-row cultivators, seeders, artificial fertilizer spreaders, broadcasters and spot placers, maize threshers, etc.
- The action of each implement when in use in the field (operation) e.g. correct setting of implement.

AGE 216 Fish Production**1C**

- Meaning, types and importance of fish/breeds, and fish products in National economy.
- Methods of fish farming – open water e.g. Rivers and lakes, high sea fishing and fishponds.
- Fishponds construction, stocking, management, fish breeding, harvesting, preservation and marketing of fishes.
- Fishing equipment, function and maintenance,
- Fish feeds and feeding (materials required for fish feeds).

AGE 217 Entrepreneurship in Agriculture**2C**

- Concept, principles and justification for entrepreneurship
 - Meaning, functions and qualities of an entrepreneur
 - The role of an entrepreneur in economic development
 - Entrepreneurship theories
 - Opportunity recognition and ways of identifying business opportunities/ideas
 - Feasibility studies – concepts, principles and features.
- Condition for establishing agribusiness

- Start-up capital: types and sources of finance for an enterprise
- Agribusiness – sources of information for Agribusiness
- Practical entrepreneurial skills acquisition in agribusiness
- Meaning of skill and skill acquisition
- Concept of risk, types of risk and ways of avoiding risk in agribusiness
- Management and Administration of small and medium skill business
- The future of business and succession issues (case study)
- Record keeping in agro business: concept, types and importance

Year Two Second Semester

AGE 221 Research Methods in Agricultural Education 1C

- Definition of Research methodology
- Types of Agricultural research
- Types of research design
- Research problems, Research questions and Hypothesis
- Types and sources Literature

- Population, sample and sampling procedures
- Sources, methods and instruments for data collection, collation and presentation of results
- Data analysis using descriptive and inferential statistics
- Research report format. Writing research proposals and thesis in Agricultural Education

AGE 222 Land Survey and Farm Stead Planning

1C

- Meaning of land survey, farm survey and farm stead planning
- Units of measurement and techniques in farm surveying
- Tools and equipment used in Simple chain survey, traverse survey and levelling
- Problems of land surveying and how to overcome them
- Users of surveys in agriculture
- Farm layout and factors of Housing and environmental control in livestock housing
- Important features of farm structures

AGE 223 Principles of Crop Protection 1C

- Meaning, aims and scope of crop protection.
- Classification, identification, and importance of plant pathogens.

- Disease development and its effect on crops.
- Types and major classes of pests and useful farm insects.
- Basic morphology and physiology of insect pests.
- Identification of insect pests and their damage to crops.
- Principles of pests and disease control.
- Weeds – classification, identification and principles of control.
- Rodents and birds that are enemies of farmers.

AGE 224 Crop Improvement

1C

- Meaning and Objectives of crop improvement.
- Application of Mendelian genetics to crop improvement.
- Genetic variability among crops.
- Centres of origin of major world crops.
- Plant breeding methods for self and cross-pollinated crops.
- Hybrids and synthetic development.
- Classes, multiplication and distribution of improved seeds.

AGE 225 Livestock Production I (Ruminants)

2C

- Meaning and importance of ruminants in livestock production
- Types and breeds of cattle, sheep, goats and their distribution
- Major exotic breeds of ruminants in Nigeria
- Systems of ruminant management of young, adults and breeding animals: (feeding, housing equipment, record keeping; diseases, parasites and their control; meat and milk preservation)
- Problems of low production in Nigeria breeds of livestock and potentials for increased milk and meat production
- Reproductive behaviour in ruminant animals
- Slaughtering facilities, techniques, dressing and dressing percentages
- Forage management and pasture conservation

AGE 226 Principles of Farm Management

1C

- Definition and scope of farm management. Role of the management functions in agricultural production.

- Farm inputs (land, labour, capital and entrepreneurship) relationship and management, farm records and control.
- Farm planning methods. Cost benefit analysis, Farm profits and financial statements, risks and uncertainties in agricultural production.

AGE 227

Practical Agriculture II / Field Trip

1C

- Intensive involvement in school farm
- Crop Routine Management Practices: seed bed preparation, planting, thinning, fertilizer application Weeding, Pest/ disease control, Staking, Harvesting, processing and storage
- Animal Routine Management Practices: brooding, caring for young and mature animals, Feeds and Feeding programmes deworming, dehorning, delousing, vaccination, castration, dipping, ear tagging/notching
- Keeping farm Record and Diaries
- Field trip to standard agriculturally based establishment/organizations

- Organizing and participating in agricultural shows and exhibitions

AGE 228 Students' Industrial Work Experience Scheme (SIWES)

(16 Weeks)

2C

Year Three First Semester

AGE 321 Environmental Education in Agriculture

1C

- Meaning of environmental education in relation to Agricultural production
- Meaning and economic importance of forest and wildlife management
- Basic principles of agro-forestry, Nigerian vegetation and forest zones
- Identification, establishment and maintenance of major economic forest trees, by-products of forest and forest trees
- Concepts, importance and techniques of wildlife conservation
- The concept of ecosystem, anatomical, physiological and genetic factors influencing animal adaptation
- Environmental factors and animal population dynamics, causes and effect of environmental degradation in farms

- Planting and maintenance of ornamental plants in schools
- Environment laws, agencies and programmes in Nigeria

AGE 322 Animal Health

1C

- Definition of animal health and diseases.
- Different types of diseases (infectious, non-infectious, parasitic, metabolic, genetic, behavioural, thermal, etc.).
- Causes of diseases e.g. living organisms, fungi, bacteria, protozoa, and viruses.
- Immunity and immune systems, types of immunity.
- Principles of health and disease management : (prevention and control— segregation, quarantine, disinfection and vaccination).
- Some diseases of livestock e.g. those caused by bacteria, viruses, protozoa and fungi, etc. (at least one for each type of livestock and poultry).
- Definition of farm animal parasites, methods of control and effect of parasites on farm animals.

AGE 323

Livestock Production II (Non-Ruminants)

2C

- Meaning and importance of non-ruminants
- Classification and breeds of non-ruminants according to uses (Swine, Rabbits Guinea Pigs)
- Reproductive behaviour in non-ruminant
- Feeding and feeding systems
- Management of young, growing, adult and breeding animals
- Housing and construction of pens
- Diseases, pests and parasites of non-ruminants and their control
- Slaughtering techniques, dressing and dressing percentages
- Methods of preservation of meat, milk and milk products

AGE 324 Animal Breeding

1C

- Meaning and Objectives of animal breeding
- Mating systems, types and Parameters for selection
- Breeding systems (inbreeding, crossbreeding, etc.)
- Breed significance, up-grading and breeding for special characteristics
- Artificial insemination and its importance
- Castration and castration

- The basic concepts of population genetics

AGE 325 Horticulture

2C

- Definition, classification, principles and practice of horticulture and characteristics of horticultural crops
- Cultivation, harvesting, sorting, grading, storage, processing, utilization and marketing of some horticultural crops
- Classification and cultivation of Vegetables:
 - Leaf (Amaranth, lettuce, cabbage etc.)
 - Fruit (Tomatoes, peppers, okra etc.)
 - Roots (carrot, beets, onions, ginger etc.)
 - Fruit trees (pawpaw, pineapple, mango, citrus, guava, pear etc.)
- Ornamental gardening: Processing of ornamental and principles of decoration
- Landscaping: Principles of (Home, school and public) landscape designs, structural and plant materials
- Nursery: seed trays, pre-nursery, seed treatment, transplanting, double digging, and composting
- Maintenance of seedlings.
- Identification of wreath decoration plants

- Students are required to prepare and maintain vegetable beds, seed trays and ornamental cuttings

AGE 326 Agricultural Marketing and Co-operatives 1C

- Definition of marketing. Kinds of markets and market situations.
- Marketing institutions, Market structure, conduct and performance.
- Price determination and factors affecting prices of agricultural commodities.
- Agriculture in Stock Exchange Price control.
- The roles of commodity associations and marketing outlets.
- Export promotion in Agriculture.
- Characteristics of agricultural production in relation to marketing, problems of agricultural marketing.
- Meaning, types and principles of co-operatives,
- Formation of co-operatives and Co-operative laws
- Roles of co-operatives in marketing agricultural products.

AGE 327A Beekeep/Farming 1C

- Bee as a social insect.

- Usefulness of bees.
- Biology of honeybee.
- Life cycle of bees.
- Feeding and swarm control methods Queen/Stock raising.
- The hive and essential equipment for honey collection.
- Honey production, Hive products, uses and harvesting.
- Bee pests and diseases.
- Bee keeping in schools.

OR

AGE 327B

Snail Farming

1C

- Snail farming as mini-livestock industry in Nigeria
- Classification, anatomy and physiology of snails
- Establishing a snail farm
- Management of snails (housing, feeding, breeding, disease and pest control)
- Harvesting, processing, preservation and marketing of snails

OR

AGE 327C Cane Rat Farming

1C

- Meaning, Objectives and advantages of cane rat farming.

- Establishing and Managing Cane Rat Farm: Principles of site selection, Stocking, feeds and feeding, Housing, Hygiene and Disease Management.

Processing, Preservation and Marketing of Cane Rat

BACHALORS DEGREE PROGRAMME

COURSE CODES AND TITLES

1. AED 121 – Introduction to Agric. Education
2. AED 111 – Mathematics for Agric. Education
3. BSC 101 – Introduction to Biology
4. CHM 101 – Introduction to Chemistry
5. AED 112 – Practical Farm Work For Schools
6. AED 122 – Introduction to Soil Education
7. AED132 – Agronomics Education
8. VTE 112 – Introduction to Vocational and Technical Education
9. AED 211 – Forest Management Education
10. AED 221 – Principles of Agric. Education
11. AED 231 – Introductory Agricultural Economics Education
12. AED 241 – Farm Tools Equipment for Teacher Education
13. AED 212 – Principles of Land Survey And Farmstead Planning
14. AED 222 – Techniques of Non-Ruminant Animal Production
Education
15. AED 232 – Techniques of Vegetable Crop Production Education
16. VTE 204 – SIWES
17. VTE 202 – Subject Methodology in Vocational Agricultural
Education
18. AED 311 – Agricultural Marketing Education

19. AED 321 – Agri-Business Management
20. AED 331 – Fish Farming and Management Education
21. AED 341 – Tree Crop Production Education
22. AED 351 – Adult Education in Agriculture
23. AED 361 – Anatomy And Physiology of Farm Animals
24. ANS 331 – Non-Ruminant Animal Production
25. AED 312 – Horticulture Education
26. AED 322 – Husbandry of Ruminant Animals for teacher Education
27. AED 332 – Introduction to Animal Breeding for teacher Education
28. ANS 332 – Ruminant Animal Production
29. CTC 322 – Crop Genetics and Breeding
30. AED 411 – Livestock And Health Education
31. AED 421- Water And Soil Conservation Education
32. AED 431 – Poultry Production for Teacher Education
33. AED 441 – Agricultural Business Communication Education
34. AED 451 – Farm and Garden Management
35. AED 461– Emerging Issues in Agriculture Education
36. VTE 401 – Seminar
37. VTE 402 – Vocational Guidance and Vocational Technology
Education
38. AED 412 – Wildlife Conservation Education
39. AED 422 – Livestock Nutrition Education

40. AED 432 – Extensive Teaching Learning Process and Method for
Teacher Education

Description of Courses

AED 111: Mathematics for Agricultural Education (2 Units)

Basic introduction to algebraic expressions, removing brackets, term involving power. Addition and subtraction of terms. Factors in algebraic expression, term involving square root, order of operation, fraction and simple equation and word multiple. Factors and multiple. Common factors, prime number and factor, index form. Highest and lowest common multiple. Average, mean, median and mode. Ratio and proportion, percentage profit and loss. Fractions; addition and subtraction of fractions, multiplication and division of fractions, share and dividend. Everyday arithmetic, simple and compound interest and indices.

AED 121: Introduction to Agricultural Education (2 Units)

Meaning and scope of vocational agricultural education. History and agricultural education in Nigeria. General objectives of agricultural education. Objectives of agricultural education at various level: primary schools, colleges of education, colleges of agriculture and universities. Basic principles of agricultural education. Careers and

opportunities in agriculture. Role of agricultural education in national development.

BSC 101: Introduction to Biology (4 Units)

CHM 101: Introduction to Chemistry (4 Units)

The nature of matter-elements, mixture and compounds; basic treatment of atomic, molecular and ionic theories; conditions affecting chemical change such as equilibrium, catalysis, enzyme action. General properties of elements in relation to the table. Types of chemical bonds, octet rules. Characteristics and significant reactions of metal and non-metals, acids bases and salts. Introduction to the rules of IUPAC nomenclature of organic compounds. Treatment of hydrocarbons, lipids proteins, enzymes, co-enzymes and hormones.

AED 112: Practical Farm Work (2 Units)

Maintenance of individual/group farm plots, collection, identification and preservation of specimens of plant/weeds, pest, disease and livestock, Safety Measures, land preparation/pre-planting, planting and post-planting operations, keeping of farm records and diaries.

AED 122: Introduction to Soil Education (2 Units)

Concept of soil education, mineral and types of rocks, rock weathering and soil formation, soil physical properties (soil texture, structure, colour, consistency, particle/bulk density, porosity/permeability, temperature, moisture, colloids, soil , organisms and organic matter).

AED 132: Agrometrics Education (2 Units)

This course is intended to enable students determine maximum input combination for optimal output through simple computation. This includes meaning, scope and importance of agrometrics education, units of measurement, determination of plant population, fertilizer and chemical rates, stocking density, feeding and liming rate, etc.

VTE 112: Introduction to Vocational and Technical Education (2 Units)

This course is intended to introduce to the student the basic historical, philosophical, sociological and economic basis of vocational education. This includes meaning, purpose, goals, values, image and objectives of vocational education as well as the historical trends in the development of vocational education in Nigeria. These include current trends in agriculture, business,

home economics and Technological teacher education. The philosophy, goals and problems associated with the implementation of the national policy relating to vocational education programmes at the three tiers of technical and vocational education are examined.

AED 211: Forest Management Education (2 Units)

Meaning of forest management education, importance of forest to national economy, Nigerian vegetation and forest zones, basic principles of forest crop production, protection, harvesting, processing and marketing of timber and other forest produce.

AED 221: Principles of Agricultural Education (2 Units)

Concepts, scope and principles of agricultural education, objectives of agricultural education, claims for agricultural education, philosophical, economical and sociological bases for agricultural education qualities needed by an agricultural educator, responsibilities of an agricultural educator, qualities needed for a good agricultural education programme, concept and basic elements of learning, general principles of learning, factors influencing learning, laws of learning, problems and prospects of agricultural education programme.

AED 231: Introduction to Agricultural Economics Education (2 Units)

Meaning and scope of agricultural economics, role of agriculture in economic development, significance of economic principles in agricultural production, demand (law of demand, factors affecting demand, types of demand and elasticity of demand), supply (law of supply, factors affecting supply, and elasticity of supply), Concept of production, production function, types of production function (increasing, constant and diminishing returns).

AED 241: Farm Tools and Equipment for Teacher Education (2 Units)

Definition of farm tools and equipment, identification of farm tools and equipment, safety measures, uses of the tools and equipment, care and maintenance, keeping of simple farm records and diaries.

AED 212: Principles of Land Survey and School Farmstead Planning (2 Units)

Meaning of land survey, farm and farmstead planning, farm surveying units of measurements and techniques, values of surveys and school farmstead, tools and equipment used in land surveying, simple chain survey, traverse survey and leveling, farm layout and factors to consider in planning farm layout, problems of land

surveying and how to overcome them, problems of school farmstead and measures for enhancing effective utilization of school farmstead.

AED 222: Techniques of Non-Ruminant Animal Production Education (2 Units)

Meaning and importance of non-ruminants in livestock production, breeds and classification according to uses, performance efficiency of different breeds, reproductive behavior and breeding methods, feed and feeding systems, management of young, growing animals, adults and breeding animals, housing and construction of simple pens, diseases, parasites and their control.

AED 232: Techniques of Vegetable Crop production Education (2 Units)

Meaning and nutritional values of vegetable, classification of vegetable according to botany, part consumed, lifespan, photoperiodism, hardness and temperature requirement, tools and equipment for tillage, influence of climate, attitude and season on vegetable productions, factors to be considered in selecting a site for vegetable garden, pre-planting operations, planting operations e.g. seed selection, seed/soil treatment, tillage, sowing etc. post-planting operations e.g. shading, mulching, thinning, prickling

out, transplanting, watering, fertilization, weeding, pest/disease control, harvesting, storage, processing, packaging and grading organization of natural seed service, vegetable seed production techniques.

VTE 202: Teaching Methodology in Vocational Agricultural Education (2 Units)

The course is designed to explore a variety of teaching methods with emphasis on: Demonstration, Discussion, Project method, field trips and Assignment methods. Questioning strategies and how to handle students' questions and answers. The utilization of in-school and community laboratories. Application of principles of curriculum and course construction to classroom situation. Emphasis on methods of teaching (Objectives, lesson planning, techniques of teaching and sources of materials), and measurement techniques appropriate to Agricultural education. Planning of demonstration farmstead and instructional techniques in Agricultural education.

VTE 204: Students Industrial Work Experience Scheme (SIWES) (2 Units)

This is an on-the-job training scheme for students to acquire industrial experience. The training enables students to: acquaint themselves with the industrial sector, expose them to heavy farm machines, equipment, understand the management of work, imbibe good working habits with emphasis on development of effective manpower. It has duration of 6 months and the attachment is

during the long vacation. Supervision of students should be by the participating departments.

AED 311: Agricultural Marketing (2 Units)

Concepts of a market and marketing, basic concept of marketing efficiency, marketing functions and institutions, cooperative and marketing boards, market structure, conduct and performance, demand, supply prices and elasticity as related to marketing, market equilibrium, perfect and Imperfect competition, pricing and output under perfect competition, marketing and economic development, problems of food/livestock marketing in Nigeria.

AED 321: Agri-business Management Education (2 Units)

Meaning and scope of farm agri-business management, functions of the farm manager, tools of farm business management e.g. law of diminishing returns, comparative advantage, farm records, gross margin, break-even, budget, financial statement e.g. balance sheets, income statement, profit and loss account and cash flow statement, theory of cost and revenue (fixed, variable, average total and marginal), theory of production, production functions and production relationship.

AED 331: Fish Farming and Management (3 Units)

Concept and scope of fisheries, importance of fisheries in economic development of Nigeria, classification, morphology, development and distribution of common fishes in the ecological environment, types of fishing gears and accessories, factors affecting site selection for fish farming pond construction, fencing and treatment, impounding water and stocking, pond management e.g. feeding, water quality/quantity control, prevention and control of predators/diseases, methods of coping (harvesting) and preservation, fish breeding techniques.

AED 341: Tree Crop Production (2 Units)

Meaning and importance of tree crop production, botany, culture, harvesting, processing, storage, marketing and utilization of major tropical tree crops such as: cocoa, oil palm, cashew, coffee, and kola.

AED 351: Adult Education in Agriculture (2 Units)

Meaning and scope of adult education, principles of adult education, organization and process, conduct and appraisal of instruction for adults, out-of-school youths (andragogy) in production agriculture, principles and practice of andragogy, community oriented instruction of youths, youths club information education, diffusion

and adoption process, barriers to learning among youths and adult programme in agriculture extension.

AED 361: Anatomy and Physiology of Farm Animals (2 Units)

Concept of anatomy and physiology of livestock, cell tissues, organ, system and organism, anatomy (skeleton, joints, dentition and muscle), physiology (digestive system, respiratory system, excretory system, circulatory system lymphatic system nervous system, and endocrine system), anatomy and physiology of mammary gland anatomy and physiology of egg production, anatomy and physiology of male reproductive organs, anatomy and physiology of female reproductive organ.

AED 312: Horticulture Education (2 Units)

Definition, principles and classification of horticulture, importance of horticulture, types of vegetable growing practices, principles of ornamental gardening, principles of landscaping, techniques of cultivating horticultural crops which includes surveying and site selection, land preparation, plant establishment, maintenance, harvesting, sorting, gardening, storage, processing, utilization and marketing. N/B students are required to prepare and maintain vegetable beds, seed trays and ornamental cuttings.

AED 322: Introduction to Animal Breeding for Teacher Education (2 Units)

Definition, aims and objectives of animal breeding, selection and types of mating systems, parameters for selection, breeding systems (inbreeding, crossbreeding, etc), artificial insemination, castration and caponisation, population genetics and breeding for special characteristics.

AED 332: Husbandry of Ruminant Animals for Teachers Education (2 Units)

Meaning and importance of ruminant in livestock production, types and breed of cattle, sheep and goats and their distribution in Nigeria, major exotic breeds of ruminants in Nigeria, systems of livestock rearing, breeding and feeding, disease, parasites and their control housing and construction of simple pen, problems and prospects of ruminant, keeping of farm records.

ANS 331: Non-Ruminant Animal Production (3 Units)

Management of breeding stock, growing of adult animals, housing, equipment and feeding principles of poultry, rabbits and pigs. Production and management practices; livestock economics; health management of stock; processing and marketing of poultry, pigs and their products.

ANS 332: Ruminant Animal Production (3 Units)

Management of breeding stock, growing of adult animals, housing, equipment and feeding principles of cattle, sheep and goat. Production and management practices; health management of ruminant animals.

CSC 322: Crop Genetics and Breeding (3 Units)

Cell structure and components, chromosomes structure, number and variations. Linkage and crossing over, mutation and genes in population. Multiple alleles, mitosis and meiosis. The origin, organization and transmission of biological variations, theory of evolution. Fundamental principles of inheritance. Mendelian genetics. Introduction to population and vegetatively propagated crops. General and special methods of selection of breeders and out-breeders; compatibility, male sterility. Heterosis. Polyploidy in crop improvement, development, multiplication and distribution of improved varieties.

AED 411: Livestock Health Education (2 Units)

Meaning of livestock health education, types of diseases (infections, parasites, metabolic, genetic, behavioural, thermal, etc), causes of diseases e.g. living organisms, fungi, bacteria, protozoan, virus, symptoms and effect of diseases, immunity, types of immunity and

immune system, principles of disease/parasite prevention, methods of disease control (segregation, quarantine, disinfection and vaccination, some disease of livestock e.g. those caused by bacteria, viruses, protozoa, fungi (at least one each type of livestock) for teacher education.

AED 421: Water and Soil Conservation Education (2 Units)

Meaning and importance of soil water conservation, classification of soil water, source of soil water (rain water, surface water and ground water), merit and demerits of sources of waters, methods of soil and water conservation, scientific methods of preventing and controlling erosion, administrative measure of checking erosion, types of irrigation and drainage and their merits and demerits, problems associated with irrigation and drainage for teacher education.

AED 431: Poultry Production for Teacher Education (2 Units)

Meaning and breeds of poultry. Classification of poultry. Importance of poultry industry. Systems of poultry management. Formation, structure and nutritive value of eggs. Factors affecting egg size and abnormal eggs. Management of incubator during incubation. Housing systems and house equipments. Brooding and practices during brooding. Problems and prospects of poultry production in Nigeria.

AED 441: Agricultural Business Communication Education (2 Units)

Definition of communication system, strategies for information fathering, dissemination, factors, designs, channels research, encoder, decoder and their effects in rural areas, extension methods (mass group, individual), diffusion process and adoption process.

AED 451: Farm and Garden Management (2 Units)

Concept and importance of school farm and garden management, factors to be considered in site selection, factors affecting the choice of school far/garden, establishment of crop and animal farm, crop/animal management practices, keeping farm records and diaries, field trip to agricultural based establishment, organizing and participation in agricultural shows and exhibitions.

AED 461: Emerging Issues in Agricultural Education (2 Units)

Identification and examination of some of the major issues presently confronting agricultural education in Nigeria and its leaders regarding the role and nature of occupational education in the nation's school systems. The major issues include: funding, methodology, curriculum, facilities, vocational guidance, Distribution, marketing education, teacher education,

measurement, evaluation and administration. The importance and problems of Career Choice in Comprehensive Schools. Students are expected to conclude this course with seminar presentation.

VTE 401: Seminar (2 Units)

This course will focus on the procedure and techniques of writing seminar. Concepts of seminar, symposium and conference. Meaning of issues, trend and problems. How to writing a seminar paper (Identifying a seminar problem, choosing a seminar topic, outline of a seminar paper, etc) common grammatical errors in seminar paper writing, seminar.

VTE 402: Vocational Guidance in Vocational and Technology Education (2 Units)

Meaning of vocational guidance, historical development of vocational guidance, philosophy and objectives of vocational guidance, basic theory of vocational development, career choice, assumptions concerning vocational choice and vocational choice in the Nigerian setting, educational and occupational information, organization and administration of vocational guidance programme placement services and follow-up.

AED 412: Wildlife Conservation Education (3 Units)

Concepts of wildlife conservation, economic importance of wildlife, reasons for studying wildlife, Nigeria's wild animal adaptation (ecosystem, anatomy, physiology and gene), environmental factors and animal population dynamics, classification of wildlife according to ecological zones, management and conservation techniques in wildlife, problems of wildlife management.

AED 422: Livestock Nutrition Education (2 Units)

Meaning and scope of livestock nutrition education, definition of terms: feed, nutrients, ingredient, ration, meal, mash, premix, feed additives, roughage, concentrate and supplement, functions, effects of deficiency and sources of classes of feed (carbohydrate, protein, fat/oil, vitamins, minerals and water.). Types of ration and ration formulation, classification of feed, feed additives and their types, feed stuffs and their nutritive contents, measuring energy in feed.

AED 432: Extension Teaching Process and Method (2 Units)

Concept, nature and philosophy of extension education, objectives, functions and principles of extension education, organization of extension education, relationship between formal education and

agricultural extension, extension teaching and learning situation, steps in extension teaching and learning process, extension teaching methods (individual, group and mass), problems of extension education in Nigeria.