UNIVERSITY OF NIGERIA, NSUKKA
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF ANIMAL HEALTH AND PRODUCTION

POSTGRADUATE PROGRAMMES IN ANIMAL HEALTH AND PRODUCTION

Philosophy

Nigeria is one of the most populous countries in tropical Africa, and is thus saddled with the herculean task of feeding her teeming and growing population. Animal production in the sub-Saharan Africa is bedeviled with many constraints among which are high disease prevalence, use of unimproved animal stocks for production, poor quality and fluctuating feed availability, lack of proper managerial ability etc. The M.Sc curriculum in animal health and production is uncommon in tropical African universities. Thus, the programme is designed to train and equip livestock professionals, and producers, farm veterinarians, livestock economists, potential livestock entrepreneurs and researchers in livestock health and production - related areas. The programme is designed to address the extant yawning knowledge gap in our approach to attaining self sufficiency in livestock production. The focus of our Ph.D programme is to engage students in innovative research and development strategies with a view to improving the quantity and/or the quality of animals/livestock and livestock products. The thematic areas are farm management, nutritional management, genomics, livestock economics, immunotherapy/herd health and biotechnology.

Objectives

1. The primary objective of the M.Sc degree programme in Animal Health and Production is to give in-depth practical, research and farm management skills in animal health and production to students.
2. The objective of our Ph.D programme is to give specialized skills through innovative research in the area of livestock health and production.

Scope

The higher degree programmes in Animal Health and Production covers areas such as training of students in applied knowledge and practices strategic for the development and improvement of productivity in the livestock, fisheries and micro-livestock sub-sector. It also addresses areas such as management-based disease control and alternative animal feed sources and options for improvement of feed quality, nutrient sources and increasing efficiency of feed utilization.

Admission Requirements

MSc. Programme

Prospective candidates must possess a Doctor of Veterinary Medicine (DVM) degree or a Bachelor of Science (B.Sc) / Bachelor of Agriculture (B. Agric.) in Animal Science or Animal Production. An applicant must have obtained a minimum grade point average of 3.5 on a 5 point scale or 3 on the 4 point scale.

Ph.D Programme

Prospectiv e candidates for the Ph.D degree programme should possess a good Master of Science (M.Sc) degree in Animal Health and Production, Animal Science or Animal Production from the University of Nigeria or any other recognized University with a minimum grade point average of 3.5 on a 5 point scale.

Areas of Specialization

i. Large Ruminant Health and Production.
ii. Small Ruminant Health and Management.
iii. Dairy Animal Health and Production.
iv. Nutrition in Health and Disease.
v. Swine Health and Production.
vi. Poultry Health and Management.
vii. Animal Genetics and Breeding.
viii. Animal Health Management and Economics.
ix. Nutrition and Biotechnology
x. Fishery, Zoo and Micro livestock.

DURATION OF PROGRAMMES

MSc. Programme

Full-Time: A minimum of 3 Semesters

A maximum of 5 Semesters

Part-Time: A minimum of 5 Semesters

A maximum of 8 Semesters

Ph.D Programme

Full-Time: A minimum of 6 Semesters

A maximum of 10 Semesters

Part-Time: A minimum of 8 Semesters

A maximum of 12 Semesters

Requirements for graduation

MSc. Programme

To be awarded the MSc. degree in Animal Health and Production, a student must have taken and passed the prescribed number of compulsory and required courses selected from the approved list, a total of 33 units as follows:

Core courses	27 units
Project report	6 units
Total	33 units

In all cases, MSc. students must write and submit to the department a project report duly supervised by a lecturer in the department whose qualifications are not below the Ph.D. Such a project report must be sent to an external examiner nominated by the department and appointed by Senate for that purpose.

Ph.D. Programme

To graduate, all the Ph.D. candidates must take and pass all the requisite courses as prescribed in the Ph.D course list below, a total of 33 units as follows:

FVM 895	Ph.D Research Project Proposal Seminar	2
FVM 896	Ph.D Research Project Progress Report Seminar	2
FVM 897	Ph.D Research Project Final Seminar	2
PGC 701	Synopsis and Grant writing	3
FVM 890	Thesis	24
	Total -	**33 units**

Every Ph.D. candidate must submit a thesis on a chosen and approved topic, supervised by a member of staff whose qualification is not below the Ph.D, and who is not lower than Senior Lecturer in rank. The supervisor must have the approval of the University Senate.

The Ph.D. thesis must be defended before an external examiner dully nominated for that purpose and appointed by Senate.

List of Approved Supervisors

i. B. C. O. Omeke (DVM, MSc.) (Professor) – Animal Health Management and Economics
ii. P. A. Nnadi (DVM, MSc. PhD) (Professor) – Nutrition in Health and Disease.
iii. C. Ezema (DVM, MSc. PhD, FCVSN) (Senior Lecturer) – Nutrition and Biotechnology.
iv. F. O. Abonyi (DVM, MSc., PhD) (Senior Lecturer) – Swine Health and Production.
v. C. J. Aronu (DVM, MSc., PhD, FCVSN) (Lecturer 1) – Poultry Health and Management.

Job Opportunities

Graduates of the higher degree programmes of the Department may be employed as academics and researchers in tertiary institutions with programmes in animal health, veterinary medicine, animal science, animal production and developmental studies. They can also serve as consultants to livestock research centres and livestock projects owned by private, governmental, and non-governmental organizations such as the WHO, FAO, UNDP etc.

MSc PROGRAMME

All MSc students are to register and take:

(i) Three compulsory faculty-based courses a project with a total credit unit load of 14.
(ii) One compulsory Postgraduate course PGC 601 (Research Methodology and application of ICT in Research) (3 credit units).
(iii)Other departmental courses as recommended for the student by the Supervisor / Department based on the student's area of specialization which must constitute a minimum of 16 units.

Compulsory Faculty-based Courses for the MSc programme.

First Semester

Course No.	***Title***	***Units***
FVM 701	Research Methods and Scientific Writing	3

Second Semester

Course No.	***Title***	***Units***
FVM 702	Biometrics and Computer Applications	3
FVM 796	Research Project Final Seminar	2
FVM 790	Research Project	6
	Total -	**14 units**

Compulsory Postgraduate course for MSc

Course No.	*Title*	*Units*
PGC 601	Research Methodology and application of ICT in Research	3

Departmental Courses for the M.Sc programme

First Semester

Course No.	***Title***	***Units***
AHP 711	Advanced Monogastrics Health & Production	2
AHP 721	Applied Veterinary Medicine	2
AHP 731	Advanced Animal Reproduction Management & Biotechnology	2
AHP 781	Advanced Animal Breeding & Genetics	2
AHP 791	Livestock Health Management, Economics & Zoonoses	2

Second Semester

Course No.	***Title***	***Units***
AHP 722	Advanced Ruminant Health & Production	2
AHP 732	Fisheries and Wild Life Health & Management	2
AHP 742	Advanced Animal Nutrition	2
AHP 774	Livestock Production and the Environment	2
AHP 786	Advanced Microlivestock & Lab. Animal Health & Production	2

Doctor of Philosophy (Ph.D) Degree Programme

All PhD students must register and take the following faculty-based courses totalling 30 credit units plus the Postgraduate School based course, Synopsis and Grant Writing (3 credit units).

Course No.	***Title***	***Units***
FVM 895	Ph.D Research Project Proposal Seminar	2
FVM 896	Ph.D Research Project Progress Report Seminar	2
FVM 897	Ph.D Research Project Final Seminar	2
PGC 701	Synopsis and Grant writing	3
FVM 890	Thesis	24
	Total -	**33 units**

COURSE DESCRIPTIONS FOR THE MASTER OF SCIENCE PROGRAMME

Compulsory Faculty-based Courses

FVM 701 Research Methods and Scientific Writing [3 units]

Definitions, value and philosophy of research. Types of studies / research. Choice of research topics. Definition of background of study, statement of problem, research question, objectives and hypotheses. Research design, sampling, sourcing, collation and analysis of data. Presentation and interpretation of results. Technical report writing. Critique of published papers. Presentation of research findings.

FVM 702 Biometrics and Computer Applications [3 units]

Definitions and value of biometry in scientific research. Variability and normal distribution. Probability, binomial and Poisson distributions. Populations and sampling. Testing differences between means. Students t – test. Chi – square. Correlation and Regression analysis. Analysis of variance. Other relevant statistics. Basics of computer appreciation. Software packages relevant to scientific and veterinary medical research and their use. Presentation of scientific reports

FVM 796 Research Project Final Seminar [2 units]

Final seminar on M.Sc research project highlighting background of the study, statement of problem, objectives of the study, methods used in carrying out the study and analysis of the data generated, results, discussion of the results and recommendations arising from the findings of the study.

FVM 790 Research Project [6 units]

Research project in the student's area of study, leading to a Project Report that shall be examined by an External Examiner.

Departmental Courses

AHP 711 Advanced Monogastrics Health & Production [2units]

Modern trends and management techniques in poultry and swine production. Systems of production in poultry and swine. Management of slurry and disposal of waste. Choice of breed and farm performance. Feeding for special targets and meat quality. Essential biosecurity in large/industrial flock management. Elements of management, disease and productivity interactions in swine and poultry. Egg and meat storage and human health. Major disease constraints in swine and poultry productions. Prevention and control of diseases in poultry and swine. Essential stock health in poultry and swine health and production. Paddock management and equine health, Kennel management and canine health. Common diseases of canines, horses. International regulations guiding transportation, movements and trade in animals.

AHP 721 Applied Veterinary Medicine [2 units]

Use and misuse of common therapeutic agents in livestock production. Approaches to proper management during treatment and surgery in meat animals. Drug intolerance among breeds / species and development of drug resistance to common diseases of animals. Major approaches in the control and prevention of animal diseases. Routine herd health in animal health and production. Ethnoveterinary medicine and animal production.

AHP 731 Advanced Animal Reproduction Management & Biotechnology [2 units]

Review of the biology of male and female reproductive organs. Physical and morphological techniques in assessing reproductive fitness and selection criteria in male and female animals. Semen collection, processing and preservation. Endocrinology of male and female reproduction. Puberty, cyclic oestrous in female animals and endocrine control, reproductive maturity. Oestrous synchronization and artificial insemination. Super ovulation and embryo transfer, cloning.

AHP 781 Advanced Breeding & Genetics [2 units]

Review of the mechanism of transfer of hereditary/genetic materials. Classification and quantification of productive traits. Selection criteria and methods of breed improvement. Heterosis, hybrid vigor and inbreeding depression. Pure bred breeding and progeny testing. Development of thoroughbreds and selective breeding. Causes of variation within and between species\breeds. Harnessing the benefits of genetic superiority. Mutation Causes and effects, radioactivity and animal \public health. Molecular techniques in animal production. Conservation of the genetic resources of livestock.

AHP 791 Livestock Health Management Economics and Zoonoses [2 unit]

Common livestock diseases and their classes, prevalence and species affected. Impact of diseases on productivity, production losses etc. Economics of livestock diseases. Major disease control and preventive measures. Disease prevention techniques; vaccinations, quarantine, isolation, prohibition of exposed or in-contact persons or animals. Zoonoses and emerging diseases of livestock, trends and economics. Epizootics and their control. General farm management economics.

AHP 722 Advanced Ruminant Health & Production [2 units]

Review of the management systems for ruminants; family holding, ranching, feedlotting, nomadic, transhumance etc. Fodder cultivation and processing, hay and silage, fodder bank. Concentrates for ruminants and ingredients. Ranch development and management. Target feeding, stock health and product quality. Peri natal management of breeding females. Topping, deworming, deticking, vaccinations. Herd health in large ruminant management. Breeding, gestational and parturition management. Care and management of the udder and neonatal health. Improved techniques in large ruminant health and management. Equipments and practices in large ruminant health care; dehorning, behooving and control of common diseases.

AHP 732 Fisheries & Wild Life **Health & Management [2 units]**

Advances in the management of fishes and wild life. Review of recent methods on domestication of tropical wild life such as grass cutter, West African giant rat, deer, snail etc. Fish and wild life nutrition in nature and captivity. Selection, breeding and bahaviour of fishes and wild species. Diseases of fishes and wild and zoo animals and their management. Brood stock management and fish hatchery operations. Environmental protection and wild life management.

AHP 742 Advanced Animal Nutrition [2 units]

Current findings and constraints in livestock and poultry nutrition. The vicious cycle between nutrition, disease, and productivity in livestock and poultry. Ingredients and its development in livestock. Advances in gastrointestinal tract modification for improved feed efficiency. Clinical and target feeding-in disease , growth, pregnancy and lactation. Feed additives and supplements, Bailing, ensiling, and drying as methods of fodder preservation. Organic animal feeding. Nutrient formulation for special feeding.

AHP 774 Livestock Production & the Environment [2 units]

Ecology and animal adaptation. Environment and animal distribution and performance. Effect of environment on animal pathogen and parasite / disease prevalence, feed availability, and quality. Effect of ecology on animal feed resource, toxic substances. Environmental extreme weather events and effect on animal performance and health; heat wave / stress, typhoons, flooding, famine, strong and persistent wind etc. Adaptation and disease resistance in livestock and poultry production. Approaches to address the effect of adverse weather events on animal production; housing, prophylaxis, selection etc. Effect of animal production on the environment. Sustainability in animal health and production.

AHP 783 Advanced Micro Livestock & Lab. Animal Health & Production [2 units]

Emerging developments in animal source food industry. Nutritional modeling in exotic species with special interest on grass cutter, West African giant rat, aqua culture, and snailry. Novel ingredients in the management of micro livestock. Health and management tips in micro livestock sub-sector. Major management and health highlights in laboratory animals. Breeding of trait specific laboratory animals. Choice of laboratory animals in study designs.

Compulsory Postgraduate course

PGC 601: Research Methodology and application of ICT in Research [3 units]

In-depth research work aimed at acquiring full knowledge and presentations in scholarly writing of the concepts, issues, trends in the definition and development of the study area from African and Western perspectives. Major steps in research: selection of problem, literature, literature review, Design, Data collection, analysis and interpretation, Conclusions. Study of various research designs, Historical, Case studies, Surveys, Descriptive, cross sectional, Experimental etc. Analysis, surveys and synthesis of conceptual and philosophical foundations of different disciplines. Identification of research problems and development of research questions and or hypotheses. Detailed treatment of methods of collecting relevant research data and the format for presenting research results (from designing the table of contents to referencing, bibliography and appendix). Data analysis and result presentation in different disciplines using appropriate analytical tools. Methods of project/dissertation writing. Application of appropriate advanced ICT tools relevant in every discipline for data gathering, analysis and result presentation. Essentials of spreadsheets, internet technology, and internet search engines. All registered Masters Degree students must attend a solution-based interactive workshop to be organized by the School of Postgraduate Studies for a practical demonstration and application of the knowledge acquired from the course, conducted by selected experts.

COURSE DESCRIPTIONS FOR THE DOCTOR OF PHILOSOPHY PROGRAMME

FVM 895 Ph.D Research Project Proposal Seminar [2 units]

Seminar on proposed Ph.D research project highlighting background of the study, review of literature on current state of knowledge of the area of research, statement of problem, objectives of the study, proposed methodology and expected output/significance of the study.

FVM 896 Ph.D Research Project Progress Report Seminar [2 units]

Progress report seminar on the Ph.D research project highlighting background of the study, statement of problem, objectives of the study, methods used so far in the study, results generated, challenges encountered, changes if any in the design of the study and general discussion of the future prospects of the study.

FVM 897 Ph.D Research Project Final Seminar [2 units]

Final seminar on the Ph.D research project highlighting background of the study, statement of problem, objectives of the study, methods used in carrying out the study and analysis of the data generated, results, discussion of the results and recommendations arising from the findings of the study.

PGC 701: SYNOPSIS AND GRANT WRITING [3 units]

Identification of types and nature of grant writing; mining of grants application calls on the internet. Determining appropriate strategy for each grant application. Study of various grant application structures and contents and writing of concept notes, detailed project description, budgeting and budget defense. Study of sample grant writings in various forms and writing of mock research and other grants. Identification of University of Nigeria synopsis structure requirements (Introduction, Methodology and Results). Determining the content of each sub-unit of the synopsis. Steps in writing of synopsis from the dissertation/Thesis document. Structural and language issues. Common errors in synopsis writing and strategies for avoiding them. The roles of the student and the supervisor in the production of a synopsis. Writing of mock synopsis. All registered Ph.D students must attend a solution based interactive workshop to be organized by the school of Postgraduate Studies for a practical demonstration and application of the knowledge acquired from the course, conducted by selected experts.

FVM 890 Thesis [24 units]

Doctor of Philosophy research project in the student's area of study, under the guidance of an approved supervisor. The study must be original and the topic comprehensively researched. The output should contribute significantly to the existing body of knowledge in the area of study. The write-up (thesis) shall be examined by an External Examiner.