**UNIVERSITY OF NIGERIA**

**DEPARTMENT OF VETERINARY MEDICINE**

**POSTGRADUATE PROGRAMMES**

**Philosophy:**

**(i) Masters Degree (M.Sc.)**

The postgraduate programme of the Department of Veterinary Medicine is concerned with specialized and advanced training in the diagnosis, prevention, treatment and control of infectious and non infectious diseases of domestic, aquatic, laboratory and wild animals.

**(ii) Doctor of Philosophy (Ph.D) programme.** The philosophy is to train qualified candidates to be research oriented and to prepared them for a more specialized academic life.

**Primary Objectives of the Postgraduate Programme:**

i. To give advanced veterinary education to students.

ii. To produce veterinarians who specialize in one area of veterinary medicine,

iii. To prepare veterinarians for further specialized careers in the academics, industry, civil service and private sector.

iv. To tackle veterinary problems facing the country so as to improve animal health and production, and

v. To produce veterinarians with specialized training for self employment.

**Entry Requirements** (1) For M.Sc degree in Veterinary Medicine Department, the basic entry requirement is a good DVM degree subject.

(2) For Ph.D in Veterinary Medicine, the candidate should make at least a GPA of 3.5 in masters.

**Mode of Postgraduate Studies:**

The M.Sc degree programme shall be pursued in the mode of course work to be examined in written paper together with research work to be presented in a project report, where course work predominates over research and constitutes not less than two-thirds (2/3) of the total credit hours. The project should constitute 6 credit hours.

The Ph.Dprogramme should normally be pursed by comprehensive research to be embodied in a thesis which carries 12 credit hours. However, in addition he should register for faculty-based courses and seminars.

**Employment Opportunities**

Products of the postgraduate programmes of the Department may be employed in the following places:

. Universities and other Higher Institutions of Learning – as Lecturers and/or research staff.

ii. Research Institutes officers in relevant sections or Departments.

iii. Federal/State ministries – as veterinary consultants involved in disease prevention, control and in epidemiology.

iv. Private establishments, such as drug companies, poultry farms, dairy farms, cattle ranches and piggery farms, banks, insurance, companies and oil companies.

v. Self-employment – our postgraduate products are so well trained that they can be elf-employed.

vi. Armed forces and Law enforcement agencies such as the Army, Police Force, Customs, Immigrations, National Drug Law Enforcement Agency, Road Safety etc.

**Graduation Requirements** (a) M.Sc. The candidate should make at least a C in the courses offered and at least AB in the project to graduate (b) Ph.D (i) The candidate should make at least GPA of 4 at the end of the year, and the School of Postgraduate Studies notified by the Department. (ii) The candidate must apply for the approval of title of thesis. (iii) To graduate, a candidate must attend at least one national seminar and present a paper and also publish part of his or her work in an impact factor (IF) –rated journal.

**List of Approved Supervisors**

**Professors**

i. B. M. Anene, DVM, M.Sc, Ph.D

ii. E. I. Ugochukwu, DVM, M.Phil, Ph.D

**Senior Lecturer**

N. E. Nweze, DVM, M.Sc, Ph.D

Note: That contract officers should be excluded from departmental list of supervisors. However, contract staff appointed approved as supervisor should have a regular serving staff as co-supervisor.

**STRESS AREAS**

The areas of specialization in the Department are:

i. Avian Medicine

ii. Ruminant Medicine

iii. Small Animal Medicine

iv. Swine Medicine

v. Equine Medicine

vi. Fish, Laboratory and Wildlife Medicine

vii. Ethnoveterinary Medicine

**M.Sc PROGRAMME**

**All MSc students are to register and take:**

1. **Five compulsory faculty-based courses with a total credit unit load of 16.**
2. **One compulsory Postgraduate course PGC 601 (Research Methodology and application of ICT in Research) (3 credit units).**
3. **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 14 units.**

**Compulsory Faculty-based Courses for the M.ScProgramme.**

**First Semester**

**Course No. Title Units**

FVM 701 Research Methods and Scientific Writing 3

FVM 795 Research Project Proposal Seminar 3

**Second Semester**

**Course No. Title Units**

FVM 702 Biometrics and Computer Application 3

FVM 796 Research Project Final Seminar 3

FVM 790 Research Project 6

 **Total 18 units**

**Compulsory Postgraduate School course for MSc**

***Course No. Title Units***

PGC 601 Research Methodology and application of ICT in Research 3

**Departmental Courses**

**Course No. Title Units**

**First Semester**

VMD 701 Advanced Diagnostic Medicine 3

VMD 703 Advanced Veterinary Internal Medicine 3

VMD 705 Advanced Veterinary Clinics and Farm Practice 3

VMD 707 General Medicine 3

VMD 711 Advanced EquineMedicine 3

VMD 713 Companion Animal Medicine 3

VMD 715 Food Animal Medicine 3

 **Total 21**

**Second Semester**

VMD 712 Advanced Avian and Aquatic Medicine 3

VMD 714 Advanced Zoo and Wildlife Medicine 3

VMD 716 Laboratory Animal Medicine 3

VMD 718 Ethnoveterinary Medicine 3

VMD 702 Principles and Methods of Preventive Medicine 3

VMD 704 Disease Surveillance and Reporting 3

VMD 706 Vaccine Production and Application 3

 **Total 21**

**Doctor of Philosophy (Ph.D) Programme**

***All PhD students must register and take the following faculty-based courses totaling 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 3

FVM 896 Ph.D Research Project Progress Report Seminar 3

FVM 897 Ph.D Research Project Final Seminar 3

PGC 701 Synopsis and Grant writing 3

FVM 890 Thesis 24

 **Total - 33 units**

**COURSE DESCRIPTION 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 questions, 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 and 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 795: Research Project Proposal Seminar (3 units)**

Seminar on proposed M.Sc 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 796: Research Project Final Seminar (3 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 (3 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**

**VMD 701: Advanced Diagnostic Medicine (3 units)**

Study of different techniques employed in the diagnosis of diseases using specific instrumentation for general clinical examination, clinics and pathological diagnosis, treatment and control of some specific diseases affecting various systems of domestic and wild animals. Clinico-diagnostic study of cases as well as chemotherapeutic approach to cases.

**VMD 703: Advanced Internal Medicine (3 units**

The mechanism of disease production particularly on some selected disease entities will be taught. The rational approach to diagnosis in various domestic and pet animals as well as the effective application of chemotherapy on these diseases will be discussed. Also the application of epidemiological parameters in selected herds for effective interpretation and management of disease outbreaks of livestock and pet animals will be emphasized.

**VMD 705: Veterinary Clinics and Farms Practice (3 units)**

The application of the theoretical and practical knowledge to diagnosis, treatment and prevention of diseases of pet and farm animals. Routine herd health visits. Candidate will be expected to attach or liaise with their supervisors during routine clinical duties. Candidate will be required to submit detailed clinical investigation of at least 20 attested clinical cases spanning two semesters. Candidates may be allowed to present one of such important cases as a seminar.

**VMD 707: General Medicine (3 units)**

Study of different techniques employed in the diagnosis of diseases. General examination of patients and instrumentation.Methods of detailed examination of various body systems, namely digestive, respiratory, urinary, musculoskeletal, cutaneous, cardiovascular and nervous systems.Clinical diagnosis, clinic-pathological study, treatment and control of diseases affecting various systems of the body e.g. pneumonia, diarrhea, uremia, etc, of domestic and wild animals.

**VMD 711: Advanced Equine Medicine (3 units)**

Introduction, aetiology, symptoms, transmission, diagnosis, treatment and control of bacterial, parasitic, viral, rickettsial and mycotic diseases of equine species. Diseases caused by nutritional, deficiency, special problems of equine species such as lameness, fracture, etc. Special focus on the clinical diagnosis and clinicopathological study of economically important diseases of equine in the tropics.

**VMD 713: Companion Animal Medicine (3 units)**

Introduction, aetiology, symptoms, transmission, diagnosis, treatment and control of bacterial, parasitic, viral, rickettsial and mycotic diseases of small animals (dog and cats). Disease caused by non-infectious agents, metabolic and nutritional deficiency. Special focus on the clinical diagnosis and clinicopathological study of economically important diseases of companion animals in the tropics.

**VMD 715: Food Animal Medicine (3 units)**

Introduction, aetiology, symptoms, transmission, diagnosis, treatment and control of bacterial, parasitic, viral, rickettsial and mycotic diseases of ruminants; diseases caused by nutritional, deficiency, metabolic disorder. Clinical diagnosis and clinicopathological study of economically important diseases of food animals.

**VMD 712: Advance Avian and Aquatic Medicine (3 units)**

Introduction, aetiology, symptoms, transmission, diagnosis, treatment and control of bacterial, parasitic, viral, rickettsial and mycotic diseases of avian and aquatic species.Special emphasis on clinical diagnosis and clinic-pathological study of economically important diseases of avian and aquatic species in the tropics.

**VMD 714: Advance Zoo and Wildlife Medicine (3 units)**

Important zoo and wildlife animal diseases will be taught. Instructions on some aspects of wildlife management will be provided. Laboratory courses will consist of demonstration in form of field trip to zoos and/or game reserves. Candidate will also be required to present a detailed clinical review based on capture, restrain, examination and clinical procedures of wild and zoo animals.

**VMD 716: Laboratory Animal Medicine (3 units)**

Laboratory animals and their value in research. Important diseases of different laboratory animals – Aetiology, symptoms, transmission, diagnosis, treatment and control of important bacterial, parasitic, viral, rickettsial and mycotic diseases of major laboratory animals. Various management methods for the different laboratory animals and implications for their health.Standards for humane handling and use of laboratory animals for research.Misuse of laboratory animals.

**VMD 718: Ethnoveterinary Medicine (3 units)**

The place of ethnoveterinary medicine in livestock and pet animal health delivery systems of pastoral and rural farmers in Africa.Sources of drugs in ethnoveterinary medical practices.Processing of ethnodrugs.Procedures for study and validation of traditional claims of efficacy of some ethnomedicine.Further drug development from ethnomedicines.

**VMD 702: Principles and Methods of Preventive Medicine (3 units)**

Curative versus preventive medicine.Concept of herd immunity. Criteria for assessing priorities in animal diseases control methods. Strategies for prevention and control of major diseases of livestock and poultry. Cost-benefit analysis of disease control strategies for prevention and control of major diseases of livestock and poultry.

**VMD 704: Disease Surveillance and Reporting (3 units)**

Clarification and scheduling of diseases.Reporting and notification of relevant disease (national and international).International surveillance systems. Development of national surveillance network and early warning system. National data bank.Veterinary jurisprudence.Acts, regulations and orders relating to animal movements, importation and trade routes.

**VMD 706: Vaccine Production and Application (3 units)**

History of vaccine production and specifically animal vaccine production in Nigeria. Vaccine quality control – tests of potency, safety and purity. Immunogenicity of modified live vaccines and inactivated vaccines.Egg-adapted and tissue culture origin vaccines.Vaccine storage and application. Vaccination breaks and failure. Planning vaccination campaigns.Animal vaccines in Nigeria.

**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 DESCRIPTION FOR THE DOCTOR OF PHILOSOPHY PROGRAMME**

**FVM 895: Ph.D Research Project Proposal Seminar (3 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 (3 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 (3 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.

**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.

**PGC 701: SYNOPSIS AND GRANT WRITING 3 Units**

Identification of types and nature of grant and 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 and requirements, (Introduction, Methodology and Results).Determining 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.