



**COLLEGE OF VETERINARY
SURGEONS NIGERIA**



MEDICINE FACULTY



**STUDENTS
HANDBOOK**

**COLLEGE OF VETERINARY
SURGEONS NIGERIA**

MEDICINE FACULTY

STUDENTS HANDBOOK

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ACKNOWLEDGEMENTS

We acknowledge the opportunity given to members of the Interim Management Committee (IMC) by the Board of the Veterinary Council of Nigeria to implement the recommendations of the Prof. J.D. Amin led Committee on the review of the College of Veterinary Surgeons Nigeria. The President of the Council AIG. Aisha A. Bajju has particularly been very helpful in assisting the IMC in its activities. We also acknowledge the support received from the Ag. Registrar Dr. E. O. Fadipe who has made himself available to attend our virtual meetings as well as attend to our issues.

Progress in reforming the College would not have been possible without the wonderful support and participation of our Veterinary Teaching Hospital Directors, Study Centre Supervisors as well as the Specialty Coordinators.

Zoaka A. Hassan
(Ag. Provost)

FORWORD

It is with great delight that I forward this information to all our prospective and current residents in Medicine Faculty. The Handbook contains the relevant and detailed information about residency programme in Medicine Faculty, which is for the compliance of all residents in the various Options of Medicine Faculty. It is pertinent that every resident is very familiar with the contents of this Handbook and makes frequent reference to it, in order to successfully and timely complete the programme. As you read through the Handbook, you will observe that the major emphasis of the training is on clinical and practical exposures, including the personal mastering of specific skills by each resident, to the chosen Option. This is what prepares a resident to pass all the prescribed examinations and be qualified as a Medicine Consultant. The essence of the programme is to improve the practice of Medicine Options and raise it to a high standard that will vividly improve the production of livestock and animal health in Nigeria, based on the one health concept.

The Faculty is open to questions on any aspect of the programme that you may wish to require further information, which may improve your performance as you progress in the programme.

The Medicine Faculty welcomes and wishes you a very successful and timely completion of your residency programme.

Professor JO Ayo
Acting Head of Medicine Faculty

COLLEGE MANAGEMENT



Prof. Zoaka A. HASSAN FCVSN
IMC Chairman & Ag. Provost



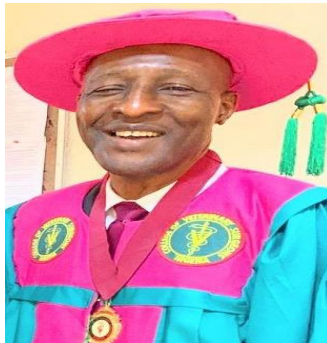
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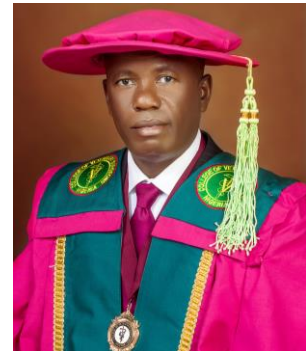
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PART 1

GENERAL INFORMATION

1.1 BRIEF HISTORY OF THE VETERINARY PROFESSION

The Veterinary profession in its present modern form can be traced back to the first Veterinary College in Lyon, France established in the year 1762. The record has it that once it was created it was known to provide scientific and professional training for comparative medicine. Hence, many ministries of Health in Europe started sending their human doctors to study the 'new medicine'. The idea is that medicine is one – human and animal; but that Veterinary Medicine is comparative medicine, more comprehensive and more demanding of efforts and resources. Veterinary Medicine is also capable of satisfying both social and economic needs of human society, through animal and human health protection, determination of animal welfare needs, promotion of human practices and unique contribution of essential knowledge for the maintenance of environmental sanitation and sanity in civilized human communities.

In Nigeria however, the first British/colonial Veterinary Surgeons started operating modern veterinary practice and giving essential services about the time the First World War began in 1914. Their mandate was not just the promotion of animal health, but also the practice of systematic animal husbandry for the production of food of animal origin, especially meat, milk and other dairy products for human consumption in war time Nigeria. By 1948, a school for the training of professional Veterinary Surgeons was established in Vom in the present Plateau State of the country. Twelve (12), Veterinary Faculties have so far been established between the mid-1960s to date in the country. They are located in the University of Ibadan, Ibadan; Ahmadu Bello University, Zaria; University of Nigeria, Nsukka; University of Maiduguri, Maiduguri; Usmanu Danfodiyo University, Sokoto; University of Abuja, University of Ilorin, University of Jos, University of Benin, Universities of Agriculture of Makurdi, Abeokuta and Umudike, Abubakar Tafawa Balewa University Bauchi as well as Bayero University Kano. However, considering that the programmes in these faculties basically constitute an academically inclined approach to the professional curriculum, it has become necessary to start a more professionally structured postgraduate programme in Nigeria as in other leading countries of the world.

1.2 GENERAL ADMISSION REQUIREMENTS

1.2.1. To be admitted into the Fellowship of the College in any Specialty/Option of Faculty:

- i. The candidate must hold a Doctor of Veterinary Medicine (DVM) degree or its equivalent recognized by the Veterinary Council of Nigeria (VCN).
- ii. The candidate must be registered with the VCN for the purpose of practicing Veterinary Medicine in Nigeria
- iii. The candidate must have flair in the area of interest as evidenced by his/her score in the subject area during the DVM training or post-DVM professional experience.
- iv. The candidate must have had at least 3 years Council registration.
- v. Additional qualifications in relevant areas may be an added advantage. Each Faculty

shall determine the extent of such advantage especially in terms of courses to be covered.

- vi. The candidate must submit an NYSC certificate or evidence of exemption.
- vii. Any Faculty may identify peculiar additional criteria appropriate to that Faculty.
- viii. Candidates must present transcript of academic performance adjudged suitable for admission into comparable postgraduate or similar professional programmes.
- ix. Candidate must be recommended by at least two Fellows of the College, who shall attest to the candidate's professional experience and conduct.

1.2.2 To be admitted directly into the third year of the Fellowship programme of the College, the candidate must have, in addition, a postgraduate degree or an equivalent qualification in the relevant Faculty.

1.3 AWARD OF COLLEGE FELLOWSHIP POSTGRADUATE DIPLOMA

For consideration of the award of a Postgraduate Fellowship Diploma, the candidate must satisfy all academic requirements prescribed by the College.

1.3.1 Regular Fellowship:

This Fellowship is awarded to Residents who have undergone the mandatory College tutelage as outlined in the College prospectus.

1.3.2 Discretionary Fellowship:

The College may, on the recommendation of the Senate, award Discretionary Fellowship Diploma, to Senior Veterinarians such as Professors of at least 15 years; Chief Veterinary Officer of the Federation, Registrar of the Veterinary Council and State Directors of Veterinary Services who have contributed to the development of the College and Veterinary Medicine, and subject to fulfilling conditions to be set by the Senate.

1.3.3 Honorary Fellowship:

The College may, on the recommendation of the Senate award Honorary Fellowship (Honoris causa) to persons of distinction in academia or the Community, who are not Veterinary Surgeons but have contributed significantly to the development of Veterinary Medicine

The holder of a Diploma awarded by the College shall be entitled to the status of a: -

- (a) Fellow, in the Specialty
- (b) Consultant, in the Specialty

Certificate of Postgraduate Fellowship Diploma of the College, shall be as prescribed by the Board and shall bear the seal of the College signatures of the Provost, the Secretary and date.

1.4 TRAINING AND EXAMINATION

1.4.1 Duration of Training

The minimum duration before enrolment for the Fellowship training is 3 years post-DVM qualification. All programmes are to run on part-time basis, provided the mandatory course Credit Units as specified by each Faculty are met. The minimum and maximum periods for the training of Fellowship is 5 and 8 years, respectively.

1.4.2 Examinations

Examinations are to be administered at the end of each year of the programme.

- (a) Each examination shall consist of written, oral and practical components as appropriate.
- (b) All examinations shall be unified but venues decentralised.
- (c) There shall be an oral PowerPoint project presentation based on each Faculty's minimum, prescribed number of case reports, which must be published in recognized journals (preferably institutional or national association journals) by each Resident.

1.4.3 Credit Units

The credit units for the two categories are as follows:

The total credit units for each year of study shall be as prescribed in the prospectus for the corresponding Faculty and Specialty.

1.4.4. Examination Results

- (a) For each examination, 50% is a pass mark.

No candidate shall be allowed to attempt any examination for more than three times. Thereafter, such a candidate shall be withdrawn from the programme. For a Resident to remain in the programme, he/she must either register after paying the prescribed fees or obtain a valid deferment.

1.4.5 Other Training Requirements

- (a) All candidates for examinations shall produce evidence of participation in the training course certified by their respective supervisors.
- (b) In all examination continuous assessment of students should form part of the result and should constitute 30 – 40% of the total score.

1.4.6 Training and Residency

There shall be a compulsory first and second semester period of a minimum of twelve weeks each, every academic session. The Clinic activity of the Residents shall be documented in a log book signed by the designated supervisor.

The training programme of the College for the Faculties shall comprise of:

- a) 12 weeks of virtual (online) facilitation in the first semester.
- b) 12 weeks of virtual (online) facilitation in the second semester.
- c) 4 weeks on on-campus residency in the Study Centre in September
- d) 12 weeks of Clinic activity (min 16hrs weekly) in the first semester at an approved Clinical Training Centre (CTC)
- e) 12 weeks of Clinic activity (min 16hrs weekly) in the second semester at an approved Clinical Training Centre (CTC)

1.5 PROGRAMME ADMINISTRATION AND EXAMINATION BOARD

1.5.1 Board of Examiners

There shall be a Board of examiners whose members must be Fellows of the Faculty. No College Resident shall be eligible to serve as a Facilitator or examiner. This is without prejudice to the appointment of recognized and professional Consultants in special cases at the discretion of the Faculty.

1.5.2 Supervisory Committee

The Resident will be assigned to a Supervisory Diplomate (Supervisor) in the 4th year of study. The Supervisor of the candidate shall in accordance with College (CVSN) Senate review or approve guidelines often submit from the respective Faculty panels for consideration and submission to the College Board for its consideration and final determination.

1.5.3 Resident's Mentor

Each Resident shall consult and obtain consent of a Senior Fellow who shall serve as his/her mentor throughout the duration of the study.

The Mentor shall be responsible for monitoring the Resident's training programme based on the curricular objectives, ascertainable experience as well as needs of the candidate. The training programme must be compatible with teaching, clinical and laboratory services, as well as research activities of the Faculty. The proportion of time needed to rotate (where required) through the component areas of training programme shall be determined by the Mentor and Centre Supervisors.

1.5.3 Academic programme Delivery

Online Lectures/Facilitation:

Lectures shall be online on the corresponding Faculty's Teams or Zoom platform. A back-up video class is also available on the College Learning Management system (LMS) serving as a backup.

1.5.3 College Senate

The Senate of the College from time to time shall inspect and determine the status of the facilities and personnel for the College programmes through the evaluation of the submissions and visits by the Senate inspection teams.

1.6 VENUES AND AVAILABLE FACILITIES

1.6.1 General Facilities

- (a) Faculties/ Colleges of Veterinary Medicine.
- (b) VTH clinical and ambulatory facilities
- (c) Diagnostic Laboratory support services including NVRI, Vom.
- (d) Selected Government and private veterinary hospitals.
- (e) University and government farms
- (f) Private livestock and poultry farms
- (g) Appropriate teaching and research equipment.

1.6.2 Personnel

- (a) Academic Staff who are Fellows of the College.
- (b) Fellows of other related disciplines such as Human Medicine
- (c) Guest lectures/trainers

1.6.3 Venues:

A. College Central Administration:

The Central administration of the College is currently hosted in the Veterinary Council of Nigeria building. The offices of all Principal Officers of the college are located in the VCN Building.

Activities:

- i. Coordination of all College activities.
- ii. Management of College finances.
- iii. College Secretariate handling all College correspondences.
- iv. Central coordination of examinations
- v. Central coordination of virtual lectures/facilitation.

vi. Convocation.

B. College Study Centres:

College Study Centres are administrative Centres for the coordination of selected college activities in the various location around the country. There are currently 8 Study Centres as presented in the accompanying table and the Specialties supervised by these Centres. Additional Study Centres may however be approved over time as the need arises.

Activities of each Faculty at the Centre are coordinated by the Faculty Study Centre Supervisor. The Supervisors along with the corresponding VTH Director constitute the Study Centre Management Committee chaired by the VTH Directed and assisted by the Chairman/Chairperson of the Supervisors.

Table 1: Study Centres of the College of Veterinary Surgeons Nigeria (CVSN)

S/No	Study Centre	Faculty	Option/Specialty		
1.	Ahmadu Bello University, Zaria.	Medicine	Clinical Pharmacology & Toxicology		
			Large Animal Medicine		
			Small Animal Medicine		
			Aquatic, Laboratory Animal & Wildlife Medicine		
			Avian Medicine		
		Pathology	Clinical Pathology		
			Diagnostic Pathology		
			Microbiology		
			Parasitology		
		Public Health & Preventive Medicine	Public Health		
			Preventive Medicine		
			Food Safety		
			Epidemiology		
		Surgery	Anaesthesiology		
			Diagnostic Imaging		
			Large Animal Surgery		
			Small Animal Surgery		
			Theriogenology		
				Medicine	Clinical Pharmacology & Toxicology
					Large Animal Medicine
		Small Animal Medicine			
		Avian Medicine			

2.	University of Ibadan, Ibadan		Aquatic, Laboratory Animal & Wildlife Medicine
		Pathology	Clinical Pathology
			Diagnostic Pathology
			Microbiology
			Parasitology
		Public Health & Preventive Medicine	Public Health
			Preventive Medicine
			Food Safety
			Epidemiology
		Surgery	Anaesthesiology
Large Animal Surgery			
Small Animal Surgery			
Theriogenology			
3.	University of Nigeria, Nsukka.	Medicine	Clinical Pharmacology & Toxicology
			Large Animal Medicine
			Small Animal Medicine
			Aquatic, Laboratory Animal & Wildlife Medicine
			Avian Medicine
		Pathology	Clinical Pathology
			Diagnostic Pathology
			Microbiology
			Parasitology
		Public Health & Preventive Medicine	Public Health
			Preventive Medicine
			Food Safety
			Epidemiology
		Surgery	Theriogenology
			Small Animal Surgery
4.	National Veterinary Research Institute Vom/ University of Jos, Jos	Medicine	Clinical Pharmacology & Toxicology
			Small Animal Medicine
			Avian Medicine
			Aquatic, Laboratory & Wildlife Medicine
		Pathology	Diagnostic Pathology
			Parasitology
			Microbiology

		Public Health & Preventive Medicine	Public Health Food Safety Epidemiology
		Surgery	Small Animal Surgery
5.	University of Maiduguri/SAS Veterinary Hospital, Maiduguri.	Medicine	Clinical Pharmacology & Toxicology Large Animal Medicine Aquatic, Laboratory & Wildlife Medicine Avian Medicine
		Pathology	Clinical Pathology Diagnostic Pathology Microbiology Parasitology
		Public Health & Preventive Medicine	Public Health Food Safety Epidemiology
		Surgery	Large Animal Surgery Theriogenology
6.	Usmanu Danfodiyo University, Sokoto/State Veterinary Hospital, Sokoto.	Medicine	Small Animal Medicine Avian Medicine
		Public Health & Preventive Medicine	Public Health Preventive Medicine
		Surgery	Small Animal Surgery Theriogenology
7.	University of Abuja, Abuja.	Medicine	Avian Medicine Clinical Pharmacology & Toxicology
		Pathology	Microbiology Parasitology
		Public Health & Preventive Medicine	Public Health Preventive Medicine

Activities:

- i. Registration and documentation of Residents.
- ii. Coordination of Clinical training in all Clinical Training Centres being supervised by the said Study Centre.

- iii. Coordination of projects of Residents registered in the corresponding Study Centre.
- iv. Coordination of local seminars at the Study Centres.
- v. Verification, endorsement and scoring Clinic Logbooks.
- vi. Coordination of examinations for Residents registered in the Centre.
- vii. Coordination and delivery of the September/October Clinic/Practical residency activities on campus.

C. Clinical Training Centres

There are currently over 20 provisionally approved Clinical Training Centres comprising of all accredited Veterinary Teaching Hospital, selected State Veterinary Hospitals as well as selected private practices. Residents are at liberty to undertake part of their Clinical Training in relevant Human Diagnostic/Medical facilities e.g. Diagnostic laboratories, Diagnostic Imaging Centres, MDAs as maybe considered relevant.

Residents domiciled outside Nigeria in the non-practice Specialties may also participate in the College activities, special arrangement for their examination shall be at the expense of the Residents. Evidence of registration to practice in the country of domicile must be provided where a Resident intends to undertake training in any of the practice-based Specialties.

Activities:

1. Coordination and supervision of Clinical training
2. Endorsement of Clinic Logbooks and Clinic Activity Reports
3. Preparing Residents for examinations

1.7 METHOD OF APPLICATION

College programmes shall be advertised annually, suitably qualified candidates may apply in response to such advertisements. Application forms shall be electronically filled and submitted virtually through the College portal.

Application Procedure:

- i. Advertisements shall be made in 2 National dailies within which all applicants shall be referred to the College Application portal.
- ii. Applicants are to fill the Application Forms online and submit.
- iii. Scanned copies of all credentials are to be attached
- iv. The application fee is to be paid into the College TSA account as provided from time to time.
- v. Once payment has been verified, Application forms shall be forwarded to the corresponding Head of Faculty for consideration of the Faculty Admission Committee.

- vi. If approved, an Admission letter is autogenerated and sent to the applicant.
- vii. The applicant is to pay the necessary registration fee (half or in full).
- viii. After verification of fee payment, details of the applicant are uploaded onto the LMS where he/she can access posted contents as well as autogenerate an examination slip without which the Resident would be denied access to examination venues/absent on the CBT portal for the examinations.

1.8 COURSE APPLICATION FEES/CHARGES.

As would be stated in the advertisement, but would be subject to changes periodically. For now, the fees are as follows

(a). Application Fee	=	₦25,000.00
(b). Tuition Fees (Annually)	=	₦200,000.00
(c) Examination Fees (Annually)	=	₦70,000.00
(d) Resit examination	=	₦30,000.00

Note:

- Candidates shall be responsible for their transport, accommodation and feeding.
- These fees are subject to periodic review

1.9 ADMINISTRATION AND MANAGEMENT OF THE COLLEGE

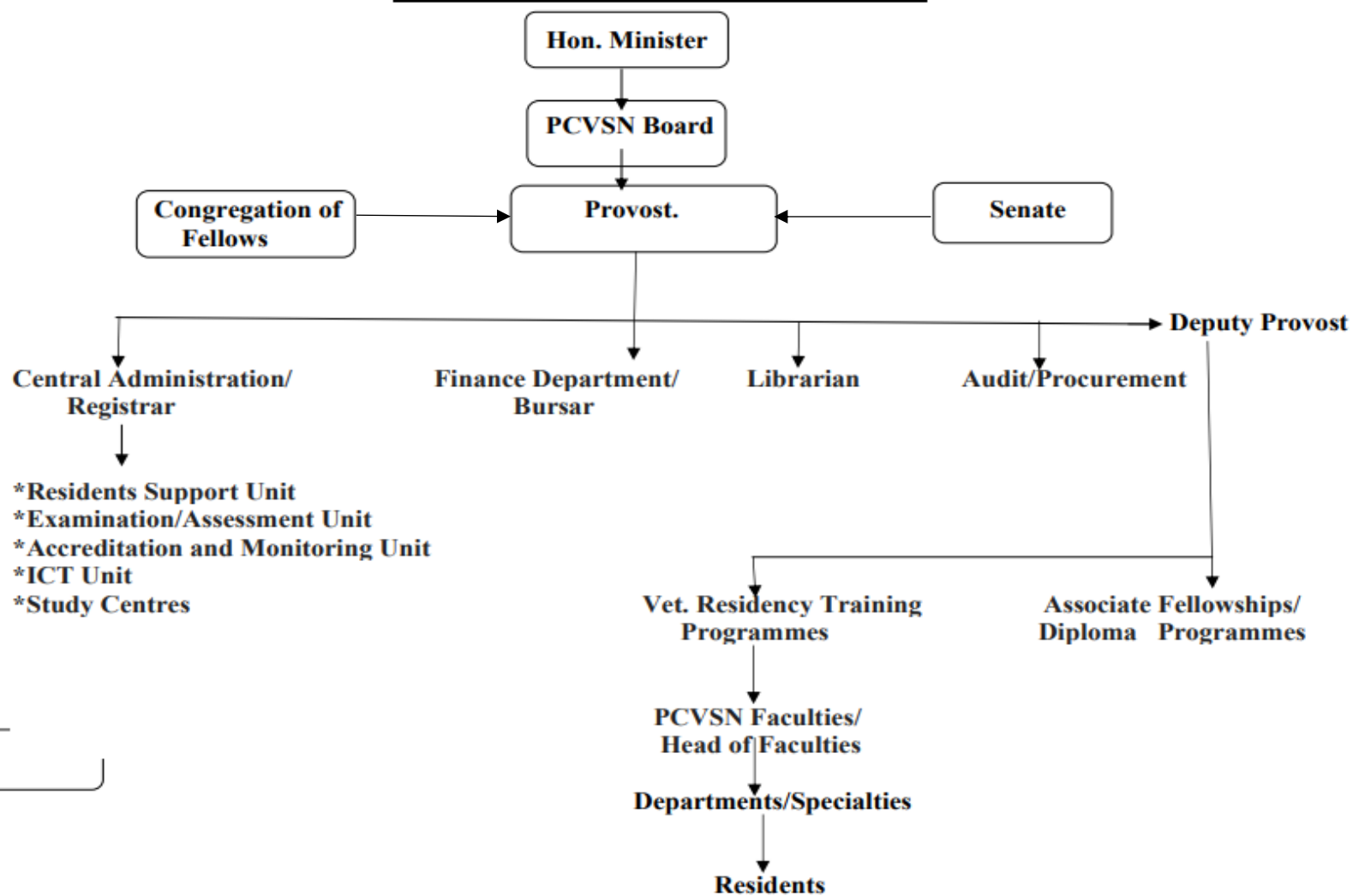
The Veterinary Council of Nigeria, for now, remains the financier and coordinating government agency for the College. There is at the moment for the purpose of directly administering the College Programmes an Interim Management Committee, an Interim College Senate, Faculty Academic Board as well as an Ag. Provost and Ag. Heads of Faculties. The Secretariat of the College is being overseen by the College Secretary and an Administrative Officer.

The administrative and management structure of the College consists of the following:

- (a) College Board
- (b) College Senate
- (c) Congregation of Fellows
- (d) College Management

The academic and professional activities of the College shall be supervised by the Senate. The College Board shall be responsible and accountable to the Hon. Minister of Agriculture. An organogram of the College is presented in the accompanying figure.

PROPOSED PCVSN ORGANOGRAM



ANNUAL 2024 PLANNER/SCHEDULE OF CVSN ACADEMIC ACTIVITIES

S/No	ACTIVITY	DURATION	2024 SESSION											
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
1	Interim Board Meeting	1 Dy												
2	Admission & Registration	8 Wks												
3	Virtual Orientation	1 Dy												
4	Virtual Lectures Semester 1	12Wks												
5	Semester 1 Clinics	12 Wks												
6	Semester 1 Break	2 Wks												
7	Virtual Lectures Semester II	12 Wks												
8	Semester 2 Clinics	12 Wks												
9	Semester 2 Break	2 Wks												
10	Study Centre September Residency	4 Wks												
11	Revision/Exams	2 Wks												
12	Resit Exams	1Wk												

KEY

- 1- 17/01/24
- 2- 20/01 – 28/02/24
- 3- 12/02/24
- 4- 13/02 – 10/05/24

- 5- 13/02 – 10/05/24
- 6- 13/05 – 26/05/24
- 7- 27/05 – 16/08/24
- 8- 27/05 – 16/08/24

- 9- 18/08 – 31/08/24
- 10- 02/09 – 27/09/24
- 11- 07/10; 14/10 – 18/10/24
- 12- 11/11 – 15/11/24

1.10 APPLICATION AND ADMISSION PROCEDURE

1.10.1 Procedure:

1. Advertisement of the programmes within the last quarter in the preceding session.
2. Download, filling and submission of the online Application Form by applicants.
3. Payment of application fee
4. Certification of payment by College Secretariate.
5. Forwarding application forms to the corresponding Faculty Head
6. Consideration of application by the corresponding Faculty Admissions Committee
7. Presentation, consideration and approval of the recommended admission list to the College Senate/Academic Board.
8. Publication of the admission list and online delivery of admission letters
9. Fee payment & online registration for the corresponding session.

1.11 ADMISSION REQUIREMENTS

Although the College specifies the benchmark for admission into the Fellowship programmes, individual Faculties/Specialties are at liberty to require additional qualifications for admission, as the need may arise.

1.11.1 Admission into Year 1

1. DVM or equivalent
2. Valid registration with the VCN
3. Minimum of 3 years relevant post-graduation experience.
4. NYSC Discharge Certificate or Exemption Letter.

1.11.2 Admission into Year 3

1. DVM plus Fellowship Part I Diploma or a relevant MSc degree
2. Minimum of 5 years post-graduation experience.
3. Valid registration with the VCN
4. NYSC Discharge Certificate or Exemption Letter.

1.12 RESIDENTS PROJECT ADMINISTRATION

As part of the training, the resident should complete an investigative project that contributes to the advancement of veterinary practice or clinical investigation. The allocation of a Supervisor shall be at the commencement of Year 3 of the programme.

At the end of Year 5, all projects are to be defended.

1.12.1 Project Management:

1. Two Supervisors shall be assigned to year 3 Residents in semester 1.
2. Students are to discuss (with their supervisor) their proposed clinical/investigative work.
3. Projects are to be undertaken within the 3rd, 4th and 5th Year of study.
4. Two clinical cases/investigations are to be thoroughly worked up and published in an acceptable professional journal (institutional or national association journals) in each of the 3 terminal years of study.
5. Students MUST communicate the progress of their work to the supervisor every semester.
6. Upon completion of the project, a request shall be sent to the Centre Supervisor through the Project Supervisor on the readiness of the student to defend his/her project.

7. Project defenses are to be conducted (hybrid) at the next examination from the corresponding Study Centre.
8. The 6 publications made are to be bound and 4 copies of the bound Project report are to be submitted (within 3 months of a successful defense) for endorsement viz.: student, supervisor, Study Centre Library and CVSNS Secretariat copies.

N.B: Project grades shall remain INCOMPLETE until bound copies of the endorsed Project report is forwarded to the Centre Supervisor and scores collated then forwarded to the Head of Faculty.

1.12.2 The project cover colour:

- i. Black for Pathology Faculty
- ii. Green for Public Health & Preventive Pathology Faculty
- iii. Maroon for Pathology Faculty
- iv. Grey/Ash for Surgery faculty

1.12.3 Sequence of Project Reporting:

- | | | |
|---|---------------------------------|----------------|
| <ol style="list-style-type: none"> 1. Cover page 2. Title page 3. Declaration page 4. Certification page 5. Acknowledgment | } All in single or 1.15 spacing | |
| <ol style="list-style-type: none"> 6. Abstract (Maximum of 300 words/1 page) 7. Table of Content (Should reflect only the 1st, 2nd and 3rd tiers of the headings) 8. List of Figures 9. List of Tables 10. List of Plates 11. List of Appendices 12. Abbreviations, Definitions, Glossary and Symbols | } 1.5 or double spacing | |
| <ol style="list-style-type: none"> 13. Introduction (Preamble, Statement/Justification, Aims and Objectives of the Project work) | | Double spacing |
| <ol style="list-style-type: none"> 14. Article 1 15. Article 2 16. Article 3 17. Article 4 18. Article 5 19. Article 6 | | |
| <ol style="list-style-type: none"> 20. Conclusion, Recommendation and Summary | | Double spacing |

Cover page

The cover page shall indicate (in upper case only) the:

- TITLE OF THE PROJECT
- NAME OF THE STUDENT (SURNAME LAST)
- FACULTY AND COLLEGE NAME
- MONTH/YEAR CORRECTIONS CERTIFIED

Title page

The following shall be on the title page (in upper case only):

- TITLE OF PROJECT
- NAME OF THE STUDENT (SURNAME LAST) WITH QUALIFICATIONS
- REGISTRATION NUMBER

Followed by:

A PROJECT REPORT SUBMITTED TO THE _____ FACULTY, COLLEGE OF VETERINARY SURGEONS NIGERIA IN PARTIAL FULFILMENT FOR THE AWARD OF FELLOWSHIP DIPLOMA (_____), COLLEGE OF VETERINARY SURGEONS NIGERIA.

-Month and Year of Certification of correction

Declaration page

The following wordings (in sentence case) are to be reflected on the Declaration page:

I declare that the work/publications in this Project report entitled _____ has been performed by me. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this Project report was previously presented for another Certificate, Degree or Diploma at this or any other Institution.

Name of Resident

Signature

Date

Certification page

The following wordings (in sentence case) are to be reflected on the Certification page:

This Project report entitled _____ (in upper case) by _____ (surname last and in upper case) meets the regulations governing the award of Fellow, College of Veterinary Surgeons Nigeria, and is approved for its' contribution to knowledge and literary presentation.

(Name) _____ (Signature) _____ Date _____
Project Supervisor

(Name) _____ (Signature) _____ Date _____
Project Supervisor

(Name) _____ (Signature) _____ Date _____
Head of Faculty/Study Centre Supervisor

Acknowledgment

The acknowledgement should contain a brief note of appreciation to all those who contributed to the success of the study.

Abstract

The abstract should not exceed 300 words which approximates 1 page. It should be typed double spaced using Times New Roman characters, font size of 12 and margins justified.

Abstract should be brief indicating the statement of the clinical/investigative work, objectives of significant contributions and conclusions.

Table of Content

This is a listing of the various sections and subsections of the Project report indicating the pages they occur. The table of contents should be double spaced. If the title of a section runs more than one line, subsequent lines are single spaced and not indented.

The table of contents should reflect only the 1st, 2nd and 3rd tiers of the headings. Whereas 1st level headings are to be in upper case and bold, 2nd level headings should be in a title case and also bold. Third level headings should not be bold and in a sentence case.

List of Figures, Tables, Plates and Appendices

Where the title of the figure, table, plate or appendix runs more than one line, subsequent lines are single spaced and not indented.

Abbreviations, Definitions, Glossary and Symbols

All abbreviations and symbols used should be explained. Terms used can also be presented as a glossary.

Article/Publication 1:

Photocopy of 1st relevant publication in year 3 of the programme.

Article/Publication 2:

Photocopy of 2nd relevant publication in year 3 of the programme.

Article/Publication 3:

Photocopy of 1st relevant publication in year 4 of the programme.

Article/Publication 4:

Photocopy of 2nd relevant publication in year 4 of the programme.

Article/Publication 5:

Photocopy of 1st relevant publication in year 5 of the programme.

Article/Publication 6:

Photocopy of 2nd relevant publication in year 5 of the programme.

Summary, Conclusion and Recommendations

The summary should present highlights of each publication within a paragraph each. The conclusions should give an inference drawn from the findings in the cases presented. Challenges encountered during the study should be indicated. Conclusions should be drawn on the basis of the publications presented and analysed.

Recommendations should be based on the major findings of the study and stated in precise terms. It should list possible ways of solving problems identified as well as highlight areas for further study.

PART 2

MEDICINE FACULTY

2.1 TRAINING VENUE AND FACILITIES

2.1.1 Study Centres

The Ahmadu Bello University, Zaria, University of Nigeria, Nsukka, University of Ibadan, University of Maiduguri, Usmanu Danfodiyo University and University of Jos and University of Abuja Study Centres are approved Study Centres for the Medicine Faculty.



Fig. 2.1: Zaria Study Centre, Ahmadu Bello University, Zaria.

2.1.2 CONTACTS

Medicine Faculty Ag. Head:

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Medicine Faculty Supervisors

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Ibadan/UI Study Centre

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2.2 SPECIALTY/OPTION COORDINATORS (HODs)

Clinical Pharmacology and Toxicology:

Prof. A. O. Anaga
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Phone No:
E-mail:

Large Animal Medicine:

Dr. S. N. A. Saidu
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Small Animal Medicine

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Aquatic, Laboratory Animal & Wildlife Medicine

Dr. G. A. Oladosu

Dept of Veterinary Medicine
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2.3 PROGRAMME DESCRIPTION**2.3.1 Clinics Management**

Supervised training implies interaction between trainee and supervisor during the diagnosis and treatment of patients as well as during case related discussions, etc. Such supervision requires the simultaneous physical presence of both trainee and supervisor at the clinic where patients are treated. The amount of supervision required will vary with the experience, skill and knowledge of the trainee.

Clinical training for the Medicine Faculty shall consist of:

1. Minimum of 16hrs of Clinics/week for 12 weeks in Semester 1.
2. Minimum of 16hrs of Clinics/week for 12 weeks in Semester 2.
3. Clinical Procedures/Practical (September/October Residency)
4. Monthly virtual Clinical seminar presentations
5. Publication of 2 cases/activities per session for Year 3, 4 & 5.

All Resident trainees are to participate in relevant clinical activities within the 3 months of each semester in an approved Clinical Training Centre. A minimum of 16Hrs per week shall be the minimum acceptable Clinic time. The following facilities are recommended for the Semester Clinical Training:

- i. Veterinary Teaching Hospitals.
- ii. Veterinary and Allied research Institute with Fellows in their employment such as NVRI Vom, NAPRI Shika etc.
- iii. State Central Veterinary Hospitals (State Capitals)
- iv. Accredited Private Veterinary Clinics/Hospitals.

Emphasis shall be on the student managing and reporting relevant cases in his/her specialty. The following are suggested for the assessment of students in Clinics;

1. The immediate supervising veterinarian shall countersign cases reported by the Resident in the Logbook.

2. The Mentor should visit the student at site whenever possible to assess the resident's conduct and participation.
3. Residents should write up at least 2 cases for publication within each such session which would be graded by the Project Supervisor in the Final year.

The Clinical Procedures logbook shall be used for the documentation and accomplishment of the various tasks and development of skills by the Year 1 & 2 Residents only.

The relevant sections are to be signed by the supervising veterinarian. Trainees are expected to successfully undertake a minimum of 80% of the procedures listed in the Clinical Procedures logbook before graduation. The various activities can be undertaken anytime within the 5 years of training. In all cases however a registered veterinarian (preferably a Fellow) must certify to the proficiency of the student in each of the supervised tasks/skills.

2.3.2 Guidelines for Medicine Faculty Residents Clinical Engagement:

1. All Medicine Faculty students are to dress appropriately and conduct themselves responsibly in Clinics/Surgery.
2. All Medicine Faculty students are to participate in the Clinics (Semester Clinics & Sept/October Residency)
3. Relevant cases attended to, are to be documented and endorsed in the corresponding Clinical Activity Logbook, this shall be submitted to the Study/Clinical Training Centre Coordinator at the end of the Semester for grading.
4. Records of attendance at the clinics are to be endorsed daily by the Supervising Veterinarian.
5. Students are to actively participate in the management of cases presented especially relevant cases to their Specialty/option of study.

2.3.3 September/October Residency Clinics

Supervised Clinical/practical sessions shall be undertaken in Sept/October each session. All Residents are expected to participate in this exercise.

All residents are to ensure that once they have achieved proficiency in the corresponding Clinical Skill, they should demonstrate same to a supervising Fellow who shall thereafter endorse the relevant component of the Skill Acquisition Logbook. ***Residents shall only be deemed to have met Clinical Skill requirements for graduation after demonstrating a minimum of 80% of the listed procedures in his/her Specialty.***

The listed clinical activities/practical sessions/demonstrations shall be undertaken and or discussed during the Sept/October Residency:

MEDICINE FACULTY

1.1 General Medicine Clinics

- Protocol for filing and file retrieval in the reception (Manual & digitised)
- Client reception protocol at the Hospital reception
- Filling the following forms using the case(s) presented:
 - a. Vaccination certificate,
 - b. Health certificate
 - c. Sample collection
 - d. Specialised examination request e.g. radiography

Large Animal Medicine Clinics

- Identify breeds (life or pictures) of Horses, Cattle, Sheep, Goat, Pig & Camels
- Determination of vital parameters (temperature, pulse and respiratory rates) for Horses, Cattle, Sheep, Goat, Pig & Camel
- Determine fluid requirement for the presented large animals.
- Apply pour-on medication and dip any large animal.
- Shave, shear or groom the animal.
- Approach and handling of: horses, cattle, sheep, goat, pig & camel
- Demonstrate the Use of a bull nose ring, anti-cow kicker, bull holder, drink water's gag (mouth gag), pig catcher, rope or crush
- Lift the fore and hind limb of cattle and horse
- Manually Cast a horse, cattle, sheep/goat & pig
- Cast a horse, cattle, sheep/goat & pig by application of a rope
- Restrain a small ruminant, piglet, boar & calf for castration & hoof trimming
- Restrain the following animals for blood, faecal and skin scrapping sampling:
 - a. Horse
 - b. Cattle
 - c. Sheep/Goat
 - d. Pig
- Perform intramuscular, intravenous, subcutaneous & other routes of injections in the different large animals
- Estimate age & weight in different large animals
- Raise a recumbent cattle and horse
- Obtain history and conduct a detailed clinical examination of any large animal & document findings
- Collect the following from the presented animal (s):
 - a. blood,
 - b. faecal,
 - c. urine,

- d. body cavity effusions,
- e. skin scrapings
- f. ectoparasites
- Calculate the dose (mg) for various drug types provided
- Open, pick and assemble a needle and syringe/automatic syringe from a pack
- Identify the available equipment used for equine practice
- Approach and handle the horse, apply a halter, rope or crush, restrain on lateral recumbency
- Pick and clean the feet of a horse
- Administer the following in the horse:
 - a. Bolus
 - b. Suspension
 - c. Subcutaneous injection
 - d. Intramuscular injection
 - e. Intravenous injection
 - f. Intramammary infusion
- Estimate the age and weight of the horse
- Ride a horse
- Perform a rectal palpation in the horse
- Pass a nasogastric tube
- Flush the mouth of a horse
- Groom a horse and wrap the tail
- Demonstrate the collection rumen fluid
- Administer the following in any food animal:
 - a. Bolus
 - b. Suspension
 - c. Subcutaneous injection
 - d. Intramuscular injection
 - e. Intravenous injection
 - f. Intra-mammary infusion
 - g. Drenching
- Demonstrate performance of hoof trimming in cattle, sheep & goats
- Demonstrate application of ear tags
- Demonstrate the use of a probang to relieve 'mango choke' in cattle

Small Animal Medicine Clinics

- Identify the various breeds (poster or life) of Dogs & Cats
- Clerk cases & write clinical reports
- Determine the vital parameters for the Dogs & Cats presented
- Identify the various clinic equipment used for Small Animals
- Demonstrate the approach & handling and restraint of dogs and cats on transit & in the Clinic (dog catcher, tape muzzle, muzzling a cat, towelling cats, Lift dog unto examination table, place a cat in a restraint bag & use of an Elizabethan collar
- Restrain a dog in:

- a. Sitting position
- b. sternal recumbency
- c. lateral recumbency
- d. dorsal recumbency
- Perform these in dogs & cats
 - a. Intramuscular injection
 - b. Subcutaneous injection
 - c. Intravenous injection (cephalic, saphenous and jugular, recurrent tarsal veins)
 - d. Intra-peritoneal inj.
- Obtain history and conduct a detailed clinical examination of (oral cavity, eyes, nasal cavity, ear etc in dogs & cats
- Collect blood, faeces from a dog & cat
- Perform neurological examinations like knee jerk reflex and wheel-barrow test
- Set up an intravenous fluid line in a dog
- Computation of volume and administration rate for iv fluids.
- Determination of blood deficit and transfusion
- Intensive care of dogs and cats
- Reconstitution and administration of vaccines in dogs & cats
- Perform a gastric lavage
- Demonstrate the use of :
 - a. stethoscope
 - b. ophthalmoscope,
 - c. vaginoscope
 - d. otoscope
 - e. laryngoscope
 - f. nail cutter
 - g. thermometer
 - h. weighing scale
 - i. "Butterfly" diagnostic set
- Place a male urinary catheter
- Place a female urinary catheter

Avian Medicine Clinic

- Sketch the design of an ideal Avian clinic and label key components
- Identify the facilities/equipment in the Avian Clinic
- Stepwise illustrate the operating procedures/protocol in the Avian Clinic
- Clerk the Avian case presented to the Clinic using the appropriate form
- Identify the various breeds (presented, visited or on poster) of chickens (broilers, pullets), turkeys or ducks

- Collection of the following samples in Poultry
 - a. Blood (Serum, plasma)
 - b. Swabs (Cloacal, oropharyngeal, tracheal, abscess)
 - c. Organ samples (Liver, spleen, lungs/gills, heart)
 - d. Skin and intestinal scrapings
 - e. Feces, feeds, water, environmental samples
- Administration of drugs and vaccines provided:
 - a. Routes of drugs and vaccines administration (oral, i/o, s/c, i/m) or in-feed medication
 - b. Calculation of drugs dosages by body weight, water and in-feed medication.
- Application of Biosecurity measures in the following Units:
 - a. Poultry hatcheries
 - b. Poultry rearing farms
 - c. Poultry breeders' farms
 - d. Biosecurity audit/assessment
- Farm visits
 - a. Precautions to take in farm visits
 - b. Dressing for farm visits
 - c. Assessing existing farm record provided
 - d. Collect relevant poultry and fish samples
 - e. Collect relevant environmental samples
- Assessment of the poultry Housing
 - a. Site selection, lay-out and orientation
 - b. Stocking density
 - c. Temperature/ventilation adjustment or maintenance
 - d. Water and feed requirements in poultry
 - e. Production assessments (Body weight, hen-day rate, bi-weekly & cumulative FCR etc) in poultry.
 - f. Demonstrate cleaning of feeders/drinkers and replacement thereafter.
- Drawing up a brooding, feeding and vaccination plan for a 100 bird layer farm.
- Demonstrate a deworming procedure
- Demonstrate manual and electric debeaking/beak trimming in a given poultry.
- Litter Management
- Ectoparasites Control:
 - a. Demonstrate the ectoparasitic control methods used in poultry.
 - b. Mention the products/drugs employed in ectoparasitic control.
- Medical approach to disease presentation
 - a. Conduct the clinical examination of the presented bird
 - b. Demonstrate necropsy procedures on the dead poultry
 - c. Demonstrate necropsy procedures on the fish presented
- Demonstrate Poultry feed formulation

Wildlife, Aquatic and Laboratory Animals Medicine Clinic

- Sketch the design of the Aquatic (Fish) clinic and label key components
- Identify the facilities/equipment in the Fish Clinic
- Stepwise illustrate the operating procedures/protocol in the Fish Clinic
- Identify pond types & aquaculture systems

- Mix fish feed types

- Clerk the Fish case presented to the Clinic/visited:
 - a) Signalment and history (Fish)
 - Date; Client/farm name; Client Tel.; Farm address; Fish species; Source of fish; Age post stocking; Type/size of fish feed; Type of receptacle/pond; Type of water management system; Pond dimension/stocking density; Morbidity & mortality; Chief complaint.
- Identify the various breeds (presented, visited or on poster) of:
 - a. Carps
 - b. Catfish
 - c. Tilapia
- Demonstrate the following procedures:
 - a. Selection of breeding stocks
 - b. Harvesting of milt (semen) from matured male fish milt sacs
 - c. Injection of hormones (Ovapr^R) to stimulate egg production in female fish
 - d. Stripping of eggs into bowls and fertilization with sperm from milt sacs
 - e. Aeration of the fertilized eggs in the incubating tank
 - f. Feeding of fish fries
- Restrain the fish provided via the following:
 - a. Water level reduction
 - b. Scooping net
 - c. Hand restraints
- Demonstrate how to transport fish by Glass tank, plastic bags/containers and use of oxygen tablets for fish

- Demonstrate collection of the following samples in Fish:
 - a. Blood (Serum, plasma)
 - b. Swabs (Cloacal, oropharyngeal, tracheal, abscess)
 - c. Organ samples (Liver, spleen, lungs/gills, heart)
 - d. Skin and intestinal scrapings
 - e. Feces, feeds, water, environmental samples
- Demonstrate the administration of drugs and vaccines provided:
 - a. Routes of drugs and vaccines administration (oral, i/o, s/c, i/m) or in-feed medication
 - b. Calculation of drugs dosages by body weight, water and in-feed medication.
- Demonstrate application of Biosecurity measures in the following Units:
 - a. Fish hatcheries
 - b. Fish rearing farms

- c. Fish breeders' farms
 - d. Biosecurity audit/assessment
- Assessment of water quality for aquaculture
- Fish Farm visits
 - a. Mentions the precautions to take in farm visits
 - b. Dress in the appropriate clothing
 - c. Assess and comment on the existing farm record provided
 - d. Collect relevant fish samples
 - e. Collect relevant environmental samples
- Assess and comment on the quality of the fish pond design
 - a. Site selection, lay-out and orientation
 - b. Stocking density
 - c. Water quality maintenance
 - d. Feed requirements in fish
 - e. Production assessments in fish.
- Types and dosage of dewormers used in aquaculture.
- Ectoparasites Control
 - a. Demonstrate the ectoparasitic control methods used in fish.
 - b. Mention the products/drugs employed in ectoparasitic control.
- Demonstrate necropsy procedures on the fish presented
- Draft a fish farm proposal/feasibility study.
- Methods of Poultry and fish processing.

Veterinary Pharmacology & Toxicology Clinics

- Reconstitute the presented drugs for oral and injectable dosing.
- Practice aspiration/withdrawal/ dispensing drugs from vials, ampoules, bottles etc.
- Storage system for drugs and biologics in the Clinic
- Contents of prescription writing
 - for clinic use prescription,
 - prescription to pharmacy to dispense for home use,
 - prescription to pharmacy to compound specialized drugs,
- Adverse drug reactions in the patient presented- side effects, drug allergy, toxic effects etc.
- Available drug combinations in the local veterinary drug market
- Ingredients for compounding specialized drugs
- Procedure for compounding specialized drugs
- Signs of body fluid disturbances.
- Calculation of fluid therapy requirements and drip rates.
- Prepare a liquid wash.
- Prepare a hand sanitizer/germicide.
- Prepare an acaricide.

2.4 LECTURES, PRACTICAL AND EXAMINATIONS

2.4.1 Programme Course and Credit Unit Allocations

1. The minimum duration of training for entrants to Years 1 & 3 Fellowship programmes shall be 5 and 3 years respectively.
2. Written examinations, Clinics/practical, presentations, publications as well as assessment of relevant Logbooks (as applicable) shall be the modality for assessment of Residents.

2.4.2 Examinations

There shall be uniform criteria for the assessment of Trainees.

1. Examinations shall be conducted at the end of every session.
2. All courses shall be graded over 100%
3. For all examinations:
 - a. < 50% = Fail
 - b. 50-59% = C Pass
 - c. 60-69% = B Good
 - d. > 70% = A Excellent
4. For Clinic grading: 30% = Sessional Clinic Report/Logbooks
30% = Sept/October Residency
40% = End of session exams (Oral, Facility identification & Demonstrations)

2.5 SEMINARS, CONFERENCES AND PUBLICATIONS

1. All Residents from years 3 – 5 of study are to develop 2 cases attended to every session and publish them in either institutional journals or National Association journals as their project.
2. All Project write-ups for Publications shall be Case Reports/investigations/activities encountered within the corresponding period of the Study.
2. Faculty virtual Seminars shall be decentralized and held monthly from the corresponding Study Centre.
- 3 VTH Directors, Study Centre Supervisors, Specialty/Option Coordinators and other Resource Persons as well as all Residents are to participate in the Seminars.
- 4 Publication printouts are to be bound and submitted to the Project Supervisor for assessment and necessary grading prior to the final defence.

N.B: Seminar and Conference presentations or publications preceding admission into the Fellowship programme are not eligible for presentation/assessment/grading as Project.

The resident while gaining experience in practice is also expected to prepare and present work at larger scientific meetings and conferences. Residents are thus encouraged to present their writeups at relevant seminars before publication.

The resident is expected to complete an investigative study on the Clinical cases handled, the outcome of which should be publishable in a peer reviewed/refereed scientific journal (National Association or Institutional Journal)

Review articles, textbook chapters and short communications will not qualify as a contribution to the publication requirements. If a paper has not been published at the time of assessment, an acceptance letter shall suffice.

2.6 LIST OF COURSES FOR MEDICINE FACULTY

Large Animal Medicine

Year 1:

Semester 1:

VML 810 Bacterial, mycoplasmal and mycotic Diseases of Large Animals

VML 812 Parasitic Diseases of Large Animals

VML 819A Large Animal Clinics IA

Semester 2:

VML 813 Nutritional and Metabolic Diseases of Large Animals

VMG 810 Clinical Diagnostic Techniques

VML 811 Viral and Rickettsial Diseases of Large Animals

VML 819B Large Animal Clinics IB

Year 2:

Semester 1:

VMG 821 Advanced Veterinary Diagnostics

VMP 823 Applied Veterinary Pharmacology and Toxicology

VML 820 Large Animal Internal Medicine

VML 829A Large Animal Clinics II A

Semester 2:

VMG 820 Case Management and Case Reviews

VMG 822 Emerging, Re-emerging and Emergency Animal Diseases

VML 829B Large Animal Clinics II B

Year 3:

Semester 1:

VMG 830 Pathophysiological Considerations in Animal Diseases

VMG 831 Veterinary Economics and Animal Disease Control

VMG 839A Large Animal Medicine Clinics IIIA

Semester 2:

VMG 832 Advanced Toxicology

VMG 833 Veterinary Pharmacology and Therapeutics

VMG 839B Large Animal Medicine Clinics IIIB

Year 4:

Semester 1:

VMG 840 Veterinary Business

VML 840 Advanced Herd Health Management

VML 849A Large Animal Clinics IVA

Semester 2:

VMG 842 Case Study and Report

VMG 843 Seminar

VMG 849B Large Animal Medicine Clinics IVB

Year 5

Semester 1:

VMG 850 Project

VMG 859A Large Animal Medicine Clinics VA

Semester 2:

VMG 851 Seminar

VMG 859B Large Animal Medicine Clinics VB

Small Animal Medicine

Year 1:

Semester 1:

VMS 810 Bacterial, Rickettsial and Mycotic Diseases of Small Animals

VMS 811 Viral Diseases of Small Animals

VMS 812 Parasitic Diseases of Small Animals

VMS 819A Small Animal Medicine Clinics 1A

Semester 2:

VMS 813 Nutritional and Metabolic Diseases of Small Animals

VMG 810 Clinical Diagnostic Techniques

VMS 819B Small Animal Medicine Clinics IB

Year 2:

Semester 1:

VMG 820 Case Management and Case Reviews

VMP 822 Advanced Veterinary Therapeutics

VMG 821 Advanced Veterinary Diagnostics

VMS 829A Small Animal Medicine Clinics IIA

Semester 2:

VMP 823 Applied Veterinary Pharmacology and Toxicology in Clinical Medicine

VMS 820 Small Animal Internal Medicine I

VMS 821 Small Animal Internal Medicine II

VMS 829B Small Animal Medicine Clinics II B

Year 3:

Semester 1:

VMG 830 Pathophysiological Considerations in Animal Diseases

VMG 831 Veterinary Economics and Animal Disease Control

VMS 839A Small Animal Medicine Clinics III A

Semester 2:

VMG 832 Advanced Toxicology

VMG 833 Veterinary Pharmacology and Therapeutics

VMS 839B Small Animal Medicine Clinics IIIB

Year 4:

Semester 1:

VMG 840 Veterinary Business

VMS 840 Basic Veterinary Ophthalmology

VMS 849A Small Animal Clinics IVA

Semester 2:

VMS 843 Case Study and Report

VMS 844 Seminar

VMS 849B Small Animal Medicine Clinics IV B

Year 5:

Semester 1:

VMS 850 Project

VMS 859A Small Animal Medicine Clinics VA

Semester 2:

VMS 851 Seminar

VMS 859B Small Animal Medicine Clinics VB

Clinical Pharmacology & Toxicology

Year 1 :

Semester 1 :

VML 810 VMS 810 VMA 811 VMW 810 –
Chose 1 Option

VML 811 VMS 811 VMA 811 VMW 811 –
Choose 1 Option

VMP 810 Food and Nutritional Toxicosis

VMP 819A Pharmacology and Toxicology Clinics IA

Semester 2:

VMG 810 Clinical Diagnostic Techniques

VMP 819B Pharmacology and Toxicology Clinics IB

Year 2:

Semester 1:

VMG 820 Case Management and Case Reviews

VMP 820 Veterinary Analytical/Regulatory Toxicology and Instrumentation

VML 823/ VMS 823 Option of either Large Animals Internal Medicine or Small Animals Internal Medicine

VMP 821 General Principles of Pharmacology and Toxicology

VMP 829A Clinical Pharmacology and Toxicology Clinics II A

Semester 2:

VMP 822 Advanced Veterinary Therapeutics

VMP 823 Applied Veterinary Pharmacology and Toxicology in Clinical Medicine

VMP 829B Clinical Pharmacology and Toxicology Clinics II B

Year 3;

Semester 1:

VMG 830 Pathophysiological Considerations in Animal Diseases

VMG 831 Veterinary Economics and Animal Disease Control

VMP 839A Clinical Pharmacology and Toxicology Clinics III A

Semester 2:

VMG 832 Advanced Toxicology

VMG 833 Veterinary Pharmacology and Therapeutics

VMP 830 Development of New Drugs and Veterinary drug legislation

VMP 839B Clinical Pharmacology and Toxicology Clinics III B

Year 4:

Semester 1:

VMG 840 Veterinary Business

VMP 849A Clinical Pharmacology and Toxicology Clinics IV A

Semester 2:

VMP 840 Advanced Health Economics

VMP 849B Clinical Pharmacology and Toxicology Clinics IV B

Year 5:

Semester 1:

VMG 850 Project

VMP 859A Clinical Pharmacology and Toxicology Clinics V A

Semester 2

VMG 851 Seminar

VMP 859B Clinical Pharmacology and Toxicology Clinics V B

Avian Medicine

Year 1:

Semester 1:

VMA 810 Clinical Anatomy and Physiology of Avian Species

VMA 811 Bacterial, mycoplasmal and Mycotic Diseases of Poultry

VMA 819A Avian Medicine Clinics I A

Semester 2:

VMA 812 Viral Diseases of Poultry

VMA 813 Parasitic Diseases of Poultry

VMA 814 Nutritional and Metabolic Diseases of Poultry and Avian toxicosis

VMA 819B Avian Clinics I B

Year 2:

Semester 1:

VMA 820 Avian Immunology and Vaccination

VMA 821 Nutrition and Immunity in Avian Species

VMA 821 Breeder Health and Hatchery Management

VMA 829A Avian Clinics II A

Semester 2:

VMA 822 Emerging and Re-emerging Poultry Diseases

VMA 823 Biosecurity for Poultry

VMA 829B Avian Clinics II B

Year 3:

Semester 1:

VMA 830 Poultry Production and Productivity in Nigeria

VMG 831 Veterinary Economics and Animal Disease Control

VMA 839A Avian Clinics III A

Semester 2:

VMA 831 Diagnostic Methods and Interpretation

VMA 832 Avian Internal Medicine

VMA 839 B Avian Clinics III B

Year 4:

Semester 1:

VMG 840 Veterinary Business

VMA 849 A Avian Clinics IV A

Semester 2:

VMA 840 Clinical Approach to Disease Diagnosis in Pet Birds

VMA 849 B Avian Clinics IV B

VMG 842 Case Study and Report II

VMG 843 Seminar

Year 5:

Semester 1:

VMA 850 Project

VMA 859A Avian Clinics V A

Semester 2:

VMG 851 Seminar

VMA 859 B Avian Clinics V B

Aquatic, Laboratory & Wildlife Medicine

Year 1:

Semester 1:

VMW 810 Diseases of Wildlife Animals

VMW 811 Laboratory Animal Diseases and Management

VMW 819A Wildlife, Aquatic and Laboratory Animal Medicine Clinics I A

Semester 2:

VMW 812 Fish Diseases and Management

VMW 813 Diagnostic Technique in Aquatic and Laboratory Animal Medicine

VMW814 Zoo and Wild Animal Management

VMW 819B Wildlife, Aquatic and Laboratory Animal Medicine Clinics I B

Year 2:

Semester 1:

VMW 821 Case Management and Case Reviews

VMW 822 Animal Welfare and Ethics

VMW 829A Wildlife, Aquatic and Laboratory Animal Medicine Clinics II A

Semester 2:

VMW 823 Applied Pharmacology and Toxicology in Clinical Medicine

VMG 822 Emerging, Re-emerging and Emergency Animal Diseases

VMW 829 B Wildlife, Aquatic and Laboratory Animal Medicine Clinics II B

Year 3:

Semester 1:

VMG 830 Pathophysiological Considerations in Animal Diseases

VMG 831 Veterinary Economics and Animal Disease Control

VMW 839A Wildlife, Aquatic and Laboratory Animal Medicine Clinics II A

Semester 2:

VMG 832 Advanced Toxicology

VMG 833 Veterinary Pharmacology and
Therapeutics

VMW 839B Wildlife, Aquatic and Laboratory
Animal Medicine Clinics II B

Year 4:

Semester 1:

VMG 840 Veterinary Business

VMW 849A Wildlife, Aquatic and Laboratory
Animal Medicine Clinics IV A

Semester 2:

VMW 840 Advanced Zoo and Wildlife
Health Management

VMW 849B Wildlife, Aquatic and Laboratory
Animal Medicine Clinics IV B

VMG 842 Case Study and Report

VMG 843 Seminar

Year 5;

Semester 1:

VMG 850 Project

VMW 859A Wildlife, Aquatic and Laboratory
Animal Medicine Clinics V A

Semester 2:

VMG 851 Seminar

VMW 859B Wildlife, Aquatic and Laboratory
Animal Medicine Clinics V B

2.7 PROGRAMME STRUCTURE

The activities in each option as well as in each year of study detailing the Credit Unit allocation is presented in the Course outline (Table 5.1).

LARGE ANIMAL MEDICINE OPTION

Year of Study	Semester	Course Code	Course Title and Description	No. of Credit Units
1	SEMESTER 1	VML 810	Bacteria, mycoplasma and mycotic Diseases of Large Animals Aetiology, epidemiology, pathophysiology, diagnosis, treatment, prevention and control of major bacterial and mycoplasmal diseases of large animals: Mastitis, caseous lymphadenitis of sheep, anthrax, blackleg, <i>Pasteurella</i> and <i>Mannheimia</i> , Actinomycosis, Actinomycosis, tuberculosis, brucellosis, dermatophilosis, mycoplasmosis including contagious bovine pleuropneumonia (CBPP). Diseases of equine: Strangles, ulcerative and epizootic lymphangitis, tetanus, neonatal streptococcal infection. Fungal diseases: Ringworm, aspergillosis, histoplasmosis, candidiasis.	3
		VML 812	Parasitic Diseases of Large Animals Aetiology, epidemiology, diagnosis, treatment, prevention and control of major endo- and ecto-parasitic diseases of large animal: Trypanosomosis, coccidiosis, babesiosis. Diseases caused by nematodes, cestodes, trematodes, and arthropods.	2
		VML 819A	Large Animal Clinics IA Clinical exposures, including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	3
		VML 813	Nutritional and Metabolic Diseases of Large Animals Production diseases (parturient paresis, downer cow syndrome, ketosis, hypomagnesemic tetany, pregnancy toxaemia).	2

			Lactation tetany of mares, osteodystrophia fibrosa, azoturia of equines. Deficiency diseases (calcium, phosphorus, iron, copper, cobalt, zinc, manganese, iodine, vitamin E and selenium, vitamin-D3, vit-A, vit B complex, vit-C and vit-K), energy deficiency (hypoglycaemia) and hypoproteinaemia.	
	SEMESTER 2	VMG 810	Clinical Diagnostic Techniques Review of anatomical localization of different body organs. Rational physical examination methods and techniques like palpation, percussion, auscultation. Paracentesis, thoracocentesis, evaluation of hydration status, rectal examination. Applications of clinical diagnostic instruments including passing of stomach tube, probang, urinary catheters, endoscopy etc.; Clinical diagnostic tests and their interpretation related to diseases of alimentary tract, liver, cardio vascular system, blood and blood-forming organs, respiratory, urinary, nervous, endocrine, musculoskeletal and integumentary systems of large animals. Collection, preservation and transport of clinical samples for laboratory diagnosis.	2
		VML 811	Viral and Rickettsial Diseases of Large Animals Aetiology, epidemiology, pathophysiology, diagnosis, treatment, prevention and control of major viral and rickettsial diseases of large animals: Foot and mouth disease, rabies, Estée des petits ruminants, pox, contagious ecthyma, heart water. African horse sickness, equine influenza, viral encephalomyelitis. Swine influenza, hog cholera, African swine fever.	3
		VML 819B	Large Animal Clinics IB Clinical exposures, including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	3

			Year 1 Total CU	15
2	SEMESTER 1	VMG 821	Advanced Veterinary Diagnostics Perform and interpret haematology, biochemistry and tissue fluid analyses. Basic diagnostic medicine sonography. Imaging techniques for the diagnosis of animal diseases (X – rays, contrast radiographs, CT, MRI, echocardiography etc); Electrocardiography, GFR assessment, pulse–oximetry etc. Theory classes to be supplemented with “hands-on” learning sessions.	2
		VMP 823	Applied Veterinary Pharmacology and Toxicology Rational prescribing of drugs, adverse drug reaction, drug combination, drug prescription and administration errors, drug overdose and regulating the use of drugs in populations. The application of anti-inflammatories and analgesics to appropriately manage pains. Clinical and forensic analysis and comparative health risk assessment of toxicants; Toxicologic disaster management and remediation.	
		VML 820	Large Animal Internal Medicine While aetiology and pathogens are reviewed, emphasis will be given on clinical signs, diagnosis, differential diagnosis, treatment and control of clinical syndromes: pneumonia, hepatitis, pancreatitis, nephritis, uraemia, cystitis, stomatitis, oesophagitis, pharyngitis, gastritis, diarrhea, tympany, malabsorption syndrome, and other gastro-intestinal dysfunctions. Cardio-vascular dysfunctions and disorders of neurologic and dermatologic systems.	3
		VML 829A	Large Animal Clinics II A Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	

	SEMESTER 2	VMG 820	Case Management and Case Reviews Case-Based Learning with emphasis on use of clinical reasoning (CR) and advanced clinical skills to perform patient care. Clinical reasoning strategies and processes. Apply CR principles to the gathering, processing and organizing clinical data to reach a diagnosis. Sessions will comprise formal lectures, CR exercises with case simulations and clinical case reviews; oral case presentation, written medical record and case report writing.	2
		VMG 822	Emerging, Re-emerging and Emergency Animal Diseases General concepts of emergence of new diseases and re-emergence of old diseases e.g. swine flu, leptospirosis, tuberculosis, equine encephalitis, Ebola and Marburg virus diseases, Lyme disease, Hendra virus disease, Hanta pulmonary syndrome, Nipah virus disease, bovine spongiform encephalopathy (BSE) etc. The biology, epidemiology and diagnosis of globally and nationally important emerging/re-emerging diseases will be discussed as well as designing strategies for their prevention and control through rapid and effective response with appropriate knowledge and skills. Veterinary disaster preparedness. Early warning of disease, risk analysis, response to disease emergencies and disasters (flood, fire, drought, release of gases, radiation etc.).	3
		VML 829B	Large Animal Clinics II B Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and must be moderated by the supervising Consultant.	3
			Year 2 Total	15
		VMG 830	Pathophysiological Considerations in Animal Diseases Environmental Physiology of Disease Agents and Disease Conditions , Predisposition, Susceptibility and Immune State of Individual Animals. Definition of the terms infection, disease, infectivity,	3

3	SEMESTER 1		<p>virulence and pathogenicity. Host/agent relationships - creation of the carrier state, types of carrier state (true carrier, incubatory carrier and convalescent carrier), types of antigenic variation (antigenic drift and antigenic shifts), incubation period, prepatent period and period of communicability. Methods of transmitting infectious agents- contact, vehicular, and vector (biological, mechanical, transovarial and transtadial) transmissions. Extrinsic determinants of disease: climate (macroclimate and microclimate), soils and man/management (overcrowding, pollution, commingling, inbreeding, hygiene etc). Intrinsic determinants of disease in the host and the effects of species, breed, age and sex on frequency of occurrence of infection and disease; genetically determined susceptibilities (single gene, chromosomal abnormalities, multifactorial diseases), anatomic structure physiological status, hormonal, nutritional and immunological status, presence of disease or medication. Oxidative stress and its role in pathophysiology of diseases. Describing disease events in populations: Disease diagnosis, population at risk, distribution of disease events in time and space. Definition of the terms endemic disease, hyperendemic disease, mesoendemic disease, hypoendemic disease, epidemic disease, pandemic disease and sporadic disease.</p> <p>Introduction of the immune system – innate immunity, adaptive or acquired immunity, vaccines and vaccination, types of vaccines, goal of vaccination. Effect of environment on immune functions-The effects of ambient temperature, photoperiod and metabolic status are to be discussed. Fever, Hyperthermia, Hypothermia.</p>	
		VMG 831	<p>Veterinary Economics and Animal Disease Control</p> <p>Basic concepts of control, prevention and eradication of diseases. Disease control options for endemic and transboundary animal diseases; preventive and therapeutic strategies; economics of livestock production and disease management. Planning and evaluation of disease control policy including systems approach to livestock development, stages in the planning process (establishing goals and targets for animal health programme, project identification, design and appraisal, and project</p>	3

			implementation, monitoring, control and evaluation) and the role of various scientific disciplines in the planning process.	
		VMG 839A	Large Animal Medicine Clinics IIIA Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	
SEMESTER 2		VMG 832	Advanced Toxicology Toxicology and environmental sanitation; basic and clinical principles of organic, inorganic and physical agents of animal disease; diagnosis, management including general emergency measures. Diseases caused by farm chemicals, phytotoxins mycotoxins and zootoxins. Diseases caused by poisonous plants, snake and insect bites. Monitoring in the environment and animal food chain. Pollution and control, warming/Green House effect, erosion, deforestation, desertification, urbanization, solid waste and chemical pollution.	3
		VMG 833	Veterinary Pharmacology and Therapeutics Veterinary Pharmacy and prescription writing; ethno-veterinary practice, ethno-veterinary therapeutics. Indications and contra-indications of common veterinary drugs and herbs. Therapeutic and prophylactic dosages of veterinary medicaments.	2
		VMG 839B	Large Animal Medicine Clinics IIIB Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	
			Year 3 Total CU	11

4	Semester 1	VMG 840	Veterinary Business Veterinary entrepreneurship; Business environment (under international, national, social and cultural milieu), business location; New venture creation and business growth – identification of business opportunities, business idea, start-ups, legal issues of start-up, legal forms of business, business growth strategies (internal and external), viability analysis of new venture, sources of fund, factors of choice of capital; Various consultancies and Business management practices – record keeping, managements of time, credit, stress and conflict, consumer services and safety/workplace management; Marketing- contemporary approaches, market development, Knowing your competitors in marketing, competitive strategies; Business evaluation techniques (e.g. SWOT analysis), and monitoring of business environment; Proposal writing- business planning including the need, process, attributes, structure and importance; ICT in business- information management, E-business, E-commerce, E-trading and Network economy.	3
		VML 840	Advanced Herd Health Management Interaction between health and production. Concept of multi-disciplinary approach to identifying and solving health and production problems on flock basis thereby raising health status and production effectiveness of herds and flocks in a holistic and cost-effective manner. Concepts of a planned herd health programme, herd health programme for improved productivity, designing a control programme for endemic infectious and parasitic diseases, vaccination programmes, handling of sick and incoming animals, the concept of closed herds for disease prevention, quarantine at farm level, combating heat stress. Antibiotic/chemical residue prevention programme for human health, analyzing farm records of production.	3
		VML 849A	Large Animal Clinics IVA	3

			Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain complete records of all cases handled in a log book and gets it moderated by the supervising Consultant.	
	Semester 2	VMG 842	Case Study and Report Report of 20 cases, thoroughly investigated and followed-up.	2
		VMG 843	Seminar Topics of clinical relevance are presented by each Resident and graded. <i>Clinical papers are presented fortnightly by Residents. Attendance, participation and presentation of seminar are mandatory for each Resident.</i>	2
		VMG 849B	Large Animal Medicine Clinics IVB Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	3
			Year 4 Total CU	13
5	Semester 1	VMG 850	Project Conduct, documentation and presentation of an approved relevant clinical research project.	9
		VMG 859A	Large Animal Medicine Clinics VA Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	3

	Semester 2	VMG 851	Seminar Pre-field (Proposal) and Project defense seminars.	2
		VMG 859B	Large Animal Medicine Clinics VB Clinical exposures including Ambulatory services under the guidance of Large Animal Medicine Consultants. Emphasis of training is on clinical assessment of cases and farm visits with focus on evaluation and designing interventions. Each Resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising Consultant.	3
			Year 5 Total	11
			TOTAL	

SMALL ANIMAL MEDICINE OPTION

Year of Study	Semester	Course Code	Course Title and Description	No. of Credit Units
1	Semester 1	VMS 810	Bacterial, Rickettsia and Mycotic Diseases of Small Animals Aetiology, epidemiology, pathophysiology, diagnosis, treatment, prevention and control of major bacterial, mycoplasmal and mycotic diseases of dogs and cats: Staphylococcal and streptococcal infections, enteric bacterial infections (e.g. campylobacter, salmonellosis, shigellosis, <i>Clostridium perfringens</i> infections), canine brucellosis, leptospirosis, mycobacteriosis; Lyme's disease, canine ehrlichiosis, feline infectious anaemia; dermatophytosis, histoplasmosis, aspergillosis, penicilliosis, candidiosis.	3
		VMS 811	Viral Diseases of Small Animals Aetiology, epidemiology, pathophysiology, diagnosis, treatment, prevention and control of major viral and diseases of dogs and cats: canine-distemper, infectious canine hepatitis, parvovirus infection, rabies, infectious tracheo-bronchitis, corona virus infection, feline pan-leucopaenia, feline infectious peritonitis, feline leukemia virus (FeLV), feline herpesvirus, feline calicivirus, feline immuno-deficiency virus (FIV).	3
		VMS 812	Parasitic Diseases of Small Animals The aetiology, epidemiology, diagnosis, treatment, prevention and control of major endo-parasitism: Toxoplasmosis, trypanosomosis, babesiosis, hepatozoonosis. Ascarioses, hookworm infection, giardiasis, amebiosis, coccidiosis, heart worm infections, (dirofilariosis), tapeworm infections (dipylidiosis) and intermediate taeniosis; and ectoparasitism (ticks, fleas, lice and mites e.g., sarcoptic and demodectic mange).	2

		VMS 819A	Small Animal Medicine Clinics 1A Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
	Semester 2	VMS 813	Nutritional and Metabolic Diseases of Small Animals Mineral and vitamin deficiencies and other related syndromes; eclampsia of bitches, hypothyroidism, diabetes mellitus and diabetes insipidus, osteodystrophia fibrosa, rickets. Malnutrition and obesity.	1
		VMG 810	Clinical Diagnostic Techniques Anatomical localization of different body organs. Rational physical examination methods and techniques like palpation, percussion, auscultation. Paracentesis, thoracocentesis, evaluation of hydration status. Applications of clinical diagnostic instruments e.g., urinary catheters, endoscopy etc.; Clinical diagnostic tests and their interpretation related to diseases of alimentary tract, liver, cardio vascular system, blood and blood-forming organs, respiratory, urinary, nervous, endocrine, musculoskeletal and integumentary systems small animals. Collection, preservation and transport of clinical samples for laboratory diagnosis.	2
		VMS 819B	Small Animal Clinics IB Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3

				3
			Year 1 Total CU	14
2	Semester 1	VMG 820	Case Management and Case Reviews Case-Based Learning with emphasis on application of clinical reasoning (CR) in patient care. Clinical reasoning strategies and processes. Apply CR principles to the gathering, processing and organizing clinical data to reach a diagnosis. Session will comprise formal lectures followed by CR exercise with case simulations and clinical case reviews; oral case presentation, written medical record and case report writing.	2
		VMP 822	Advanced Veterinary Therapeutics Fluid and electrolyte disorders and fluid therapy; indications for fluid therapy, selection of fluid, determination of volume and speed of administration, complications of administration. Antimicrobial, antineoplastic and hormonal therapy. Blood transfusion and emergency critical care, peritoneal dialysis/haemodialysis, gastric lavage, parenteral total nutrition, nebulization, oxygen therapy, abdominocentesis, thoracocentesis.	2
		VMG 821	Advanced Veterinary Diagnostics Perform and interpret haematology, biochemistry and tissue fluid analyses. Basic diagnostic medicine sonography. Imaging techniques for the diagnosis of animal diseases (X – rays, contrast radiographs, CT, MRI, echocardiography etc); Electrocardiography, GFR assessment, pulse–oximetry etc. Theory classes to be supplemented with “hands-on” learning sessions.	2
		VMS 829A	Small Animal Medicine Clinics IIA Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all	3

			activities in a case log book and get it checked by the supervising consultant.	
Semester 2	VMP 823	Applied Veterinary Pharmacology and Toxicology in Clinical Medicine	Rational prescribing of drugs, adverse drug reaction, drug combination, drug prescription and administration errors, drug overdose. Drug residue in food animals and regulating the use of drugs in populations. The application of anti-inflammatories and analgesics to appropriately manage pains. Clinical and forensic analysis and comparative health risk assessment of toxicants; Toxicologic disaster management and remediation.	2
	VMS 820	Small Animal Internal Medicine I	Diseases of hepatobiliary system: hepatitis, jaundice; Urinary system: nephritis, uraemia, cystitis; Cardiovascular system: arrhythmias, myocarditis, endocarditis, valvular heart disease, heart failure (acute and congestive), peripheral circulatory failure, thrombosis, embolism and congenital cardiac defects; Digestive system: dysphagia, megaesophagus, gastritis, enteritis, obstipation, malabsorption.	2
	VMS 821	Small Animal Internal Medicine II	Neurologic inflammatory conditions of the brain (encephalitis), spinal cord (myelitis) and meninges (meningitis); Diseases of the respiratory (pulmonary hypertension, pulmonary thromboembolism, pulmonary parenchymal disease) and skin (dermatitis, pyoderma, pityriasis, papules, pustules, urticaria, eczema, photosensitization, alopecia, immune mediated skin disorders).	2
	VMS 829B	Small Animal Medicine Clinics II B	Clinical exposures; students shall participate in diagnosis and treatment of sick animals under supervision by Small Animal Medicine Consultants. Maintenance of case records. Presentation of selected/assigned cases. Each Resident to maintain a detailed record of all activities in a case log book and get it moderated by the supervising Consultant.	3

3	Semester 1	Year 2 Total CU		15
		VMG 830	<p>Pathophysiological Considerations in Animal Diseases</p> <p>Environmental Physiology of Disease Agents and Disease Conditions, Predisposition, Susceptibility and Immune State of Individual Animals. Definition of the term's infection, disease, infectivity, virulence and pathogenicity. Host/agent relationships - creation of the carrier state, types of carrier state (true carrier, incubatory carrier and convalescent carrier), types of antigenic variation (antigenic drift and antigenic shifts), incubation period, prepatent period and period of communicability. Methods of transmitting infectious agents- contact, vehicular, and vector (biological, mechanical, transovarial and transstadial) transmissions. Extrinsic determinants of disease: climate (macroclimate and microclimate), soils and man/management (overcrowding, pollution, commingling, inbreeding, hygiene etc). Intrinsic determinants of disease in the host and the effects of species, breed, age and sex on frequency of occurrence of infection and disease; genetically determined susceptibilities (single gene, chromosomal abnormalities, multifactorial diseases), anatomic structure physiological status, hormonal, nutritional and immunological status, presence of disease or medication. Oxidative stress and its role in pathophysiology of diseases.</p> <p>Describing disease events in populations: Disease diagnosis, population at risk, distribution of disease events in time and space. Definition of the terms endemic disease, hyperendemic disease, mesoendemic disease, hypoendemic disease, epidemic disease, pandemic disease and sporadic disease.</p> <p>Introduction of the immune system – innate immunity, adaptive or acquired immunity, vaccines and vaccination, types of vaccines, goal of vaccination. Effect of environment on immune functions-The effects of ambient temperature, photoperiod and metabolic status are to be discussed. Fever, Hyperthermia, Hypothermia.</p>	3
		VMG 831	<p>Veterinary Economics and Animal Disease Control</p> <p>Basic concepts of control, prevention and eradication of diseases. Disease control options for endemic and transboundary animal diseases; preventive and therapeutic strategies; economics of livestock production and disease management. Planning and evaluation of disease control policy including</p>	3

			systems approach to livestock development, stages in the planning process (establishing goals and targets for animal health programme, project identification, design and appraisal, and project implementation, monitoring, control and evaluation) and the role of various scientific disciplines in the planning process.	
		VMS 839A	Small Animal Medicine Clinics III A Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
	Semester 2	VMG 832	Advanced Toxicology Toxicology and environmental sanitation; basic and clinical principles of organic, inorganic and physical agents of animal disease; diagnosis, management including general emergency measures. Diseases caused by farm chemicals, phytotoxins mycotoxins and zootoxins. Diseases caused by poisonous plants, snake and insect bites. Monitoring in the environment and animal food chain. Pollution and control, warming/Green House effect, erosion, deforestation, desertification, urbanization, solid waste and chemical pollution.	3
		VMG 833	Veterinary Pharmacology and Therapeutics Veterinary Pharmacy and prescription writing, drug residue in food animals; ethno-veterinary practice, ethno-veterinary therapeutics. Indications and contra-indications of common veterinary drugs and herbs. Therapeutic and prophylactic dosages of veterinary medicaments.	2
		VMS 839B	Small Animal Medicine Clinics IIIB Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of	3

			sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	
			Year 3 Total CU	11
4	Semester 1	VMG 840	Veterinary Business Veterinary entrepreneurship; Business environment (under international, national, social and cultural milieu), business location; New venture creation and business growth – identification of business opportunities, business idea, start-ups, legal issues of start-up, legal forms of business, business growth strategies (internal and external), viability analysis of new venture, sources of fund, factors of choice of capital; Various consultancies and Business management practices – record keeping, managements of time, credit, stress and conflict, consumer services and safety/workplace management; Marketing- contemporary approaches, market development, Knowing your competitors in marketing, competitive strategies; Business evaluation techniques (e.g. SWOT analysis), and monitoring of business environment; Proposal writing- business planning including the need, process, attributes, structure and importance; ICT in business- information management, E-business, E-commerce, E-trading and Network economy.	3
		VMS 840	Basic Veterinary Ophthalmology Diseases of conjunctiva, cornea, sclera, iris, orbit, lens, vitreous and aqueous humor, retina and optic nerve. Ocular manifestations of systemic diseases. Ophthalmic instrumentation, examination of the eye and diagnosis; ocular therapeutics.	1
		VMS 849A	Small Animal Clinics IVA Clinical exposures; students shall participate in diagnosis and treatment of sick animals under supervision by Small Animal Medicine Consultants. Maintenance of case records. Presentation of selected/assigned cases.	3

			Each resident to maintain a detailed record of all activities in a case log book and gets it moderated by the supervising consultant.	
		VMS 843	Case Study and Report Report of 20 cases thoroughly investigated and followed-up.	2
		VMS 844	Seminar Topics of clinical relevance are presented by each Resident and graded. <i>Clinical papers are presented fortnightly by Residents. Attendance, participation and presentation of seminar are mandatory for each Resident.</i>	2
		VMS 849B	Small Animal Medicine Clinics IV B Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
			Total	11
5	Semester 1	VMS 850	Project Conduct, documentation and presentation of an approved relevant clinical research project.	9
		VMS 859A	Small Animal Medicine Clinics V A Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	
	Semester 2	VMS 851	Seminar Pre-field (Proposal) and Project defense seminars.	2

		VMS 859B	Small Animal Medicine Clinics V B Hands-on training on diagnosis and treatment of diseases under supervision by Small Animal Medicine Consultants. Clinical examination of sick animals; use of diagnostic techniques for diagnosis and institution of required therapy. Maintenance of case records. Presentation of selected/assigned cases. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	
			Year 5 Total CU	11

CLINICAL PHARMACOLOGY AND TOXICOLOGY OPTION

Year of Study	Semester	Course Code	Course Title and Description	No. of Credit Units
1	Semester 1	VML 810 VMS 810 VMA 811 VMW 810 etc	Option of Infectious Diseases of either Large Animals; Small Animals; Poultry or Wildlife, Aquatic and Laboratory Animals.	2/6
		VML 811 VMS 811 VMA 811 VMW 811	Option of Parasitic Diseases of either Large Animals; Small Animals; Poultry or Wildlife, Aquatic and Laboratory Animals.	3
		VMP 810	Food and Nutritional Toxicosis Nutrition-related toxicology (metabolic toxins and intoxication) in animals including poultry production-related poisoning; aquatic animal toxicology.	1
		VMP 819A	Pharmacology and Toxicology Clinics IA Hands-on training on care and management of sick animals with emphasis on therapeutic protocol application. Each resident should maintain an activity and case log book.	3
	Semester 2	VMG 810	Clinical Diagnostic Techniques Anatomical localization of different body organs. Rational physical examination methods and techniques like palpation, percussion, auscultation. Paracentesis, thoracocentesis. Evaluation of hydration status and rectal examination. Applications of clinical diagnostic instruments including passing of stomach tube, nasopharyngeal tube, probang, urinary catheters etc. Clinical diagnostic tests and their interpretation related to diseases of alimentary tract, liver, cardio vascular system, blood and blood-forming organs, respiratory, urinary, nervous, endocrine, musculoskeletal and	3

			integumentary systems of various species of animals. Collection, preservation and transport of clinical samples for laboratory diagnosis.	
		VMP 819B	Pharmacology and Toxicology Clinics IB Hands-on training on care and management of sick animals with emphasis on therapeutic protocol application. Each resident should maintain an activity and case log book.	3
			Year 1 Total CU	12/16
2	Semester 1	VMG 820	Case Management and Case Reviews Case-Based Learning with emphasis on use of clinical reasoning (CR) and advanced clinical skill to perform patient care. Clinical reasoning strategies and processes. Apply CR principles to the gathering, processing and organizing clinical data to reach a diagnosis. Sessions will comprise formal lectures, CR exercises with case simulations and clinical case reviews; oral case presentation, written medical record and case report writing.	2
		VMP 820	Veterinary Analytical/Regulatory Toxicology and Instrumentation Commonly used laboratory techniques, analytical methods and instrumentation. Toxicity testing; analytical methods and their validation as used to detect and quantify drugs, toxins, or xenobiotics in the environment, in animals feed, and in animal body fluids and tissue; target animal safety toxicology and the legal requirements and regulatory evaluation as relates to toxic agents and chemicals, including radionuclides.	2
		VML 823/ VMS 823	Option of either Large Animals Internal Medicine or Small Animals Internal Medicine	2
		VMP 821	General Principles of Pharmacology and Toxicology Basic principles of pharmacology and therapeutics including molecular pharmacology; Basic concept of pharmacokinetics and pharmacodynamic. Basic principles of toxicology (poisons, sources, exposures; via Inhalation, Ingestion, Skin, their toxic effects, classification, metabolism, excretion, diagnosis and management).	2

		VMP 829A	Clinical Pharmacology and Toxicology Clinics II A Clinical exposures under supervision by consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
	Semester 2	VMP 822	Advanced Veterinary Therapeutics Fluid and electrolyte disorders and fluid therapy; indications for fluid therapy, selection of fluid, determination of volume and speed of administration, complications of administration. Antimicrobial, antineoplastic and hormonal therapy. Blood transfusion and emergency critical care, peritoneal dialysis/haemodialysis, gastric lavage, parenteral total nutrition, nebulization, oxygen therapy, paracentesis, thoracocentesis.	2
		VMP 823	Applied Veterinary Pharmacology and Toxicology in Clinical Medicine Rational prescribing of drugs, adverse drug reaction, drug combination, drug prescription and administration errors, drug overdose and regulating the use of drugs in populations. The application of anti-inflammatories and analgesics to appropriately manage pains. Clinical and forensic analysis and comparative health risk assessment of toxicants; Toxicologic disaster management and remediation.	2
		VMP 829B	Clinical Pharmacology and Toxicology Clinics II B Clinical exposures under supervision by Consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
				Year 2 Total CU
		VMG 830	Pathophysiological Considerations in Animal Diseases Environmental Physiology of Disease Agents and Disease Conditions , Predisposition, Susceptibility and Immune State of Individual Animals. Definition of the terms infection, disease, infectivity, virulence	3

3	Semester 1	<p>and pathogenicity. Host/agent relationships - creation of the carrier state, types of carrier state (true carrier, incubatory carrier and convalescent carrier), types of antigenic variation (antigenic drift and antigenic shifts), incubation period, prepatent period and period of communicability. Methods of transmitting infectious agents- contact, vehicular, and vector (biological, mechanical, transovarial and transtadial) transmissions. Extrinsic determinants of disease: climate (macroclimate and microclimate), soils and man/management (overcrowding, pollution, commingling, inbreeding, hygiene etc). Intrinsic determinants of disease in the host and the effects of species, breed, age and sex on frequency of occurrence of infection and disease; genetically determined susceptibilities (single gene, chromosomal abnormalities, multifactorial diseases), anatomic structure physiological status, hormonal, nutritional and immunological status, presence of disease or medication. Oxidative stress and its role in pathophysiology of diseases.</p> <p>Describing disease events in populations: Disease diagnosis, population at risk, distribution of disease events in time and space. Definition of the terms endemic disease, hyperendemic disease, mesoendemic disease, hypoendemic disease, epidemic disease, pandemic disease and sporadic disease.</p> <p>Introduction of the immune system – innate immunity, adaptive or acquired immunity, vaccines and vaccination, types of vaccines, goal of vaccination. Effect of environment on immune functions-The effects of ambient temperature, photoperiod and metabolic status are to be discussed. Fever, Hyperthermia, Hypothermia.</p>	
		<p>VMG 831</p> <p>Veterinary Economics and Animal Disease Control</p> <p>Basic concepts of control, prevention and eradication of diseases. Disease control options for endemic and transboundary animal diseases; preventive and therapeutic strategies; economics of livestock production and disease management. Planning and evaluation of disease control policy including systems approach to livestock development, stages in the planning process (establishing goals and targets for animal health programme, project identification, design and appraisal, and project</p>	2

			implementation, monitoring, control and evaluation) and the role of various scientific disciplines in the planning process.	
		VMP 839A	Clinical Pharmacology and Toxicology Clinics III A Clinical exposures under supervision by Consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
	Semester 2	VMG 832	Advanced Toxicology Toxicology and environmental sanitation; basic and clinical principles of organic, inorganic and physical agents of animal disease; diagnosis, management including general emergency measures. Diseases caused by farm chemicals, phytotoxins mycotoxins and zootoxins. Diseases caused by poisonous plants, snake and insect bites. Monitoring in the environment and animal food chain. Pollution (Air, Water, Noise Pollution) and control. Sanitation. Degradation in the Nigerian Ecosystem; warming/Green House effect, erosion, deforestation, desertification, urbanization, solid waste and chemical pollution. Waste Management and Control. Climate Change. Global Warming and Greenhouse Gases; Ruminants and Global Warming; Agriculture and Climate Change; Alternative Energy. The Role of the Veterinarian in Environmental Protection	3
		VMG 833	Veterinary Pharmacology and Therapeutics Veterinary Pharmacy and prescription writing, drug residue in food producing animals; ethno-veterinary practice, ethno-veterinary therapeutics. Indications and contra-indications of common veterinary drugs and herbs. Therapeutic and prophylactic dosages of veterinary medicaments.	2
		VMP 830	Development of New Drug and Veterinary drug legislation Process of new drug development and clinical trials; design and analysis of clinical trials, principles of clinical trials, types of designs,	2

			randomization, matching and use of placebo. Drug regulation and national drug policy. Vaccine and vaccine development.	
		VMP 839B	Clinical Pharmacology and Toxicology Clinics III B Clinical exposures under supervision by Consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
			Year 3 Total CU	13
4	Semester 1	VMG 840	Veterinary Business Veterinary entrepreneurship; Business environment (under international, national, social and cultural milieu), business location; New venture creation and business growth – identification of business opportunities, business idea, start-ups, legal issues of start-up, legal forms of business, business growth strategies (internal and external), viability analysis of new venture, sources of fund, factors of choice of capital; Various consultancies and Business management practices – record keeping, managements of time, credit, stress and conflict, consumer services and safety/workplace management; Marketing- contemporary approaches, market development, Knowing your competitors in marketing, competitive strategies; Business evaluation techniques (e.g. SWOT analysis), and monitoring of business environment; Proposal writing- business planning including the need, process, attributes, structure and importance; ICT in business- information management, E-business, E-commerce, E-trading and Net work economy.	3
		VMP 849A	Clinical Pharmacology and Toxicology Clinics IV A Clinical exposures under supervision by Consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3

	Semester 2	VMP 840	Advanced Health Economics Pharmacoeconomic methodologies – cost minimization analysis, cost-benefit analysis, cost-effectiveness analysis, cost-utility analysis, cost-of-illness evaluation, cost-consequence analysis. Pharmacovigilance – risk and benefit of drug use in animals including the cause, manifestations and consequence of adverse drug effects. Detection, monitoring of ADRs and related historic and legal frameworks. Strategies to improve risk communications and principles of risk management and compliance to clinical safety.	2
		VMP 849B	Clinical Pharmacology and Toxicology Clinics IV B Clinical exposures under supervision by Consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain complete records of all cases handled in a log book and get it checked by the supervising consultant.	3
		VMG842	Case Study and Report I Report of 20 cases, thoroughly investigated and followed-up.	2
		VMG843	Seminar Topics of clinical relevance are presented by each resident and graded.	2
			Total	12
5		VMG 840	Project Conduct, documentation and presentation of an approved relevant clinical research project.	9
		VMP 859A	Clinical Pharmacology and Toxicology Clinics V A Clinical exposures under supervision by Consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3

		VMG 841	Seminar Project defense seminar.	2
		VMP 859B	Clinical Pharmacology and Toxicology Clinics V B Clinical exposures under supervision by Consultants; emphasis on therapeutic management of cases; assessment, diagnosis and clinical care of animals exposed to drugs and toxicants. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	3
			Year 5 Total CU	11
			TOTAL	

Attendance, participation and presentation of seminar are mandatory for each resident.

AVIAN MEDICINE OPTION

Year of Study	Semester	Course Code	Course Title and Description	No. of Units
1	Semester 1	VMA 810	Clinical Anatomy and Physiology of Avian Species Highlight features of Avian anatomy, especially the integument & appendages; the digestive, respiratory and reproductive systems AND physiology of clinical relevance: the integument & appendages; haematology the digestive, respiratory and reproductive systems including endocrine –ovulation processes.	3
		VMA 811	Bacterial, mycoplasmal and Mycotic Diseases of Poultry Prevalence, aetiology with some details, epidemiology, pathology, specific and differential diagnosis, treatment, prevention and control (public health implications, if any) of major bacterial mycoplasmal and mycotic diseases of poultry species: Salmonellosis, infectious coryza, mycoplasmosis, spirochaetosis, fowl cholera, avian colibacillosis, tuberculosis, staphylococcal, streptococcal and clostridial diseases, ORT infection, avian infectious hepatitis and chlamydiosis; brooder's pneumonia, thrush.	2
		VMA 819A	Avian Medicine Clinics I A Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens. Each resident should maintain an activity and case log book.	3
		VMA 812	Viral Diseases of Poultry Prevalence, aetiology with some details, epidemiology, pathology, specific and differential diagnosis, treatment, prevention and control (public health implications, if any) of major viral and mycotic diseases of poultry species. Viral Diseases: Newcastle disease, avian influenza, fowl pox, Marek's disease, lymphoid leukosis, infectious bursal disease, egg drop syndrome, Infectious laryngotracheitis, infectious bronchitis,	2

	Semester 2		hydropericardium syndrome, inclusion body hepatitis, avian infectious anaemia, viral arthritis, femur head necrosis, avian encephalomyelitis.	
		VMA 813	Parasitic Diseases of Poultry The aetiology, epidemiology, diagnosis, treatment, prevention and control of major parasitic diseases of poultry caused by protozoa, nematodes, cestodes and arthropods.	2
		VMA 814	Nutritional and Metabolic Diseases of Poultry and Avian toxicosis Outlines on Single and multifactorial nutritional diseases and implications for stock health and production. Elements of feed and feeding for different species & types of poultry Feed contamination with mycotoxin in poultry species and other avian toxicosis.	2
		VMA 819B	Avian Clinics I B Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens. Each resident should maintain an activity and case log book.	3
			Year 1 Total CU	14
	Semester 1	VMA 820	Avian Immunology and Vaccination Avian immune system; organs and immune response to vaccines and important avian pathogens; and vaccination strategies. Impact of poor nutrition on the ability of birds to resist or tolerate infection and /or disease. Carbohydrate; Protein; Vitamins, etc.	3
		VMA 821	Nutrition and Immunity in Avian Species Impact of poor nutrition on the ability of birds to resist or tolerate infection and /or disease. Carbohydrate; Protein; Vitamins, etc.	
		VMA 821	Breeder Health and Hatchery Management Poultry breeder health; hygiene and sanitation in breeder flocks; egg handling and incubations guidelines. Egg borne diseases (internal and external); procedure for investigation of low hatchability, etc.;	2
		VMA 829A	Avian Clinics II A	3

2			Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens. Each resident should maintain an activity and case log book.	
	Semester 2	VMA 822	Emerging and Re-emerging Poultry Diseases The epidemiology, prognosis and global profiles of emerging/reemerging avian diseases ; e.g. avian influenza; necrotic enteritis; avian malaria, avian metapneumovirus etc.	2
		VMA 823	Biosecurity for Poultry Transboundary diseases of poultry and those transmissible from poultry to humans. Biosecurity risks and principles. Biosecurity measures to protect backyard, commercial and breeder farms, hatcheries, transporters during transporting poultry and poultry products to markets, live bird markets and sellers, feed mills and feed millers, poultry processors and poultry consumers. Cleaning and disinfection principles and procedures. Biosecurity planning, assessment of biosecurity risks and formulating recommendations for improving biosecurity. Economic benefits of poultry biosecurity.	3
		VMA 829B	Avian Clinics II B Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens, turkeys, ducks etc. Each resident should maintain an activity and case log book.	3
			Year 2 Total CU	13
Semester 1	VMA 830	Poultry Production and Productivity in Nigeria Structure and economy of global & the Nigerian poultry industry; (population, poultry and egg market, production systems); Farm hygiene and sanitation (Disinfectants, Cleaning, Disinfection); Quarantine; poultry farm rodent control and other necessary biosecurity measures, etc. Farm /Flock inspection; Investigation of stock performance reduced productivity in health & disease outbreak. Hatchery inspection and	2	

3			Certification. Legislations relating to poultry disease control, import & export certification, etc.	
		VMG 831	Veterinary Economics and Animal Disease Control Basic concepts of control, prevention and eradication of diseases. Disease control options for endemic and transboundary animal diseases; preventive and therapeutic strategies; economics of livestock production and disease management. Planning and evaluation of disease control policy including systems approach to livestock development, stages in the planning process (establishing goals and targets for animal health programme, project identification, design and appraisal, and project implementation, monitoring, control and evaluation) and the role of various scientific disciplines in the planning process.	3
		VMA 839A	Avian Clinics III A Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens. Each resident should maintain an activity and case log book.	3
		VMA 831	Diagnostic Methods and Interpretation Data collection; clinical observations; Ante-mortem sampling; post-mortem examination and diagnosis Sampling (single and paired) for diagnosis; Laboratory procedures, haematology; protozoan parasitology for speciation; serology and sero-seroprofiling; confirmatory diagnostic methods as related to Avian species and diseases.	3
		VMA 832	Avian Internal Medicine Clinical disorders of birds and their management - Skin and feathers; beak and cere; eyes; legs. Feet and toes; gastrointestinal tract; cardiovascular system; respiratory system; reproductive tract, nervous system; etc.	2
		VMA 839 B	Avian Clinics III B Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health	3

			diagnosis and management- turkeys, ducks. Field attachments in integrated poultry operation. Each resident should maintain an activity and case log book.	
			Year 3 Total CU	13
4	Semester 1	VMG 840	Veterinary Business Veterinary entrepreneurship; Business environment (under international, national, social and cultural milieu), business location; New venture creation and business growth – identification of business opportunities, business idea, start-ups, legal issues of start-up, legal forms of business, business growth strategies (internal and external), viability analysis of new venture, sources of fund, factors of choice of capital; Various consultancies and Business management practices – record keeping, managements of time, credit, stress and conflict, consumer services and safety/workplace management; Marketing- contemporary approaches, market development, Knowing your competitors in marketing, competitive strategies; Business evaluation techniques (e.g. SWOT analysis), and monitoring of business environment; Proposal writing- business planning including the need, process, attributes, structure and importance; ICT in business- information management, E-business, E-commerce, E-trading and Net work economy.	3
		VMA 849 A	Avian Clinics IV A Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens. Each resident should maintain an activity and case log book.	3
	Semester 2	VMA 840	Clinical Approach to Disease Diagnosis in Pet Birds Examination room equipment; history taking; husbandry; nutrition; behavior; presenting problem; distant examination; physical examination; clinical techniques.	3
		VMA 849 B	Avian Clinic IV B	3

			Clinical exposures, including Farm attachment in vertically and horizontally integrated Poultry. Each resident should maintain an activity and case log book.		
		VMG 842	Case Study and Report II Report of 20 cases, thoroughly investigated and followed-up.	2	
		VMG 843	Seminar Topics of clinical relevance are presented by each resident and graded.	2	
			Total	13	
5	Semester 1	VMA 850	Project Conduct, documentation and presentation of an approved relevant clinical research project.	6	
		VMA 859A	Avian Clinics V A Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens. Each resident should maintain an activity and case log book.	3	
	Semester 2	VMG 851	Seminar Project defense seminar.	2	
		VMA 859 B	Avian Clinics V B Clinical exposures, including Ambulatory services under the tutelage of Poultry Consultants; with emphasis on stock performance/ health diagnosis and management- domestic chickens. Each resident should maintain an activity and case log book.	3	
				Year 5 Total CU	11
				TOTAL	

Theoretical, research and clinical papers are presented fortnightly by residents. Attendance, participation and presentation of seminar are mandatory for each resident.

WILDLIFE, AQUATIC AND LABORATORY ANIMAL MEDICINE SPECIALTY/OPTION

Year of Study	Semester	Course Code	Course Title and Description	No. of Credit Units
1	Semester 1	VMW810	<p>Diseases of Wildlife Animals Aetiology, epidemiology, symptoms, diagnosis, therapy and control of important infectious, parasitic, metabolic, nutritional and toxicological diseases of important zoo and wild animals in Nigeria. Stress-related consequences of the capture of wild animals. The prevention of capture-related diseases. The following diseases and conditions are to be discussed: Wild ruminants and omnivores – foot-and-mouth disease (FMD), African swine fever (ASF), rinderpest, peste des petit ruminants (PPR), bovine malignant catarrhal fever (BMCF), trypanosomosis (nagana); Wild carnivores – rabies, canine distemper, parvoviral disease, mite infestation; Primates - herpes, measles, rabies, tuberculosis, pneumonia, tetanus, salmonellosis, shigellosis, amoebiasis, balantidiasis, giardiasis, helminths, arthropod infestations, bites & scratches, scurvy, acute gastric dilatation.</p>	2
		VMW811	<p>Laboratory Animal Diseases and Management An overview of laboratory animal species, their housing, feeding and management. Aetiology, epidemiology, symptoms, diagnosis, treatment and control of important infectious, parasitic, neoplastic, metabolic, nutritional and toxicological diseases of laboratory animal (mice/rats, rabbits, guinea pigs). Administration of drugs (special aspects of drug selection, dose regimens and mode of administration to lab. animals). The following diseases and conditions are to be discussed: guinea pig cytomegalovirus, rat coronavirus, mouse hepatitis virus (MHV), sendaivirus, and poxviruses (ectromelia), lymphocytic choriomeningitis (LCM), Helicobacter hepatitis; mycoplasmosis, streptococcal lymphadenitis, pneumonia (streptococcal and bordetellosis), clostridial enterotoxaemia, pseudomonas septicaemia, pasteurellosis, staphylococcosis,</p>	2

			salmonellosis, yersiniosis, chlamydiosis, Tyzzer's disease; mucoid enteropathy, necrobacillosis, coccidiosis, giardiasis, pneumocystis pneumonia, pinworms (nematodiasis), tapeworms (cestodiasis), mites (acaridiasis) and lice (pediculosis) infestations; neoplasms (mammary tumors, lymphomas, Fischer rat Leukemia; scurvy, pregnancy toxemia, ketosis, diabetes mellitus, heat exhaustion, dystocia, fight wounds, cannibalism, ringtail, chronic glomerulonephropathy, torsion of uterus or stomach, soft tissue mineralization.	
		VMW 819A	Wildlife, Aquatic and Laboratory Animal Medicine Clinics I A Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	3
Semester 2		VMW 812	Fish Diseases and Management Fish husbandry and management including aquarium management. Fish pond sanitation procedures. Methods of medication. Aquatic ecosystem of fresh, marine and brackish waters. Aetiology, epidemiology, symptoms, lesions, diagnosis, therapy and control of bacterial, viral, mycotic, parasitic, nutritional and toxicological diseases of fish. The following diseases are to be discussed: Haemorrhagic septicaemia, erythroderma, enteritis, septicaemia, fish tuberculosis, columnaris, corynebacteriosis, dropsy, gill rot, fin/tail rot, vertical scale disease, saprolegniasis, lernaesis (anchor worm), cryptobiosis, Myxosporidiasis, ichthyophythrissis, trichodiniasis, trichodinelliasis, dactylogyrosis, black spot, cloudy eye, furunculosis, constipation, pop-eye (exophthalmia), swim bladder disease, tumors, ulcers, velvet (gold dust disease), fish pox, flipover; water quality induced diseases (ammonia poisoning etc).	2
		VMW813	Diagnostic Technique in Aquatic and Laboratory Animal Medicine Physical and chemical restraint of different lab animal species. Laboratory animal anaesthesia. Collection of samples for laboratory investigations. Fish	2

			handling and transport. Fish anaesthesia. Laboratory diagnosis of important fish diseases.	
		VMW814	Zoo and Wild Animal Management A review of the habitats of wild animals in Nigeria. In-situ conservation- national parks, game reserves, bird sanctuaries etc. Ex-situ conservation- zoological gardens, gene banks etc. Capture, care, transportation and conservation of wild animals: A discussion of factors to be considered in capturing wild animals, planning a capture operation, principles for successful capture, capturing methods/techniques. Chemical methods, types of chemicals, delivery systems and factors affecting choice of chemicals; darting, and handling of wild animals under sedation/immobilization, advantages and disadvantages of immobilizing through darting. Physical methods e.g. confinement, physical barriers, psychological tools etc. Techniques of drug administration.	3
		VMW 819B	Wildlife, Aquatic and Laboratory Animal Medicine Clinics I B Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	3
			Year 1 Total CU	14
		VMW 821	Case Management and Case Reviews Case-Based Learning with emphasis on application of clinical reasoning (CR) in patient care. Apply CR principles to the gathering, processing and organizing clinical data to reach a diagnosis. Clinical reasoning strategies and processes. Each session will comprise a formal lecture followed by CR exercise with case simulations and clinical case reviews; oral case presentation, written medical record and case report writing.	3
		VMW 822	Animal Welfare and Ethics	2

2			Care and use of animals. Laboratory animal sources and international primate trade. Animal testing, animal testing regulations and protection laws. Ethics of handling of animals; alternatives to animal testing.	
		VMW 829A	Wildlife, Aquatic and Laboratory Animal Medicine Clinics II A Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	3
	Semester 2	VMW 823	Applied Pharmacology and Toxicology in Clinical Medicine Rational prescribing of drug, adverse drug reaction and drug-drug interactions, drug prescription and administration errors, drug overdose. Managing poisoning by drugs and other chemicals and regulating the use of drugs in populations.	2
		VMG 822	Emerging, Re-emerging and Emergency Animal Diseases General concepts of emergence of new diseases and re-emergence of old diseases e.g. swine and avian flu, leptospirosis, tuberculosis, equine encephalitis, Ebola and Marburg virus diseases, Lyme disease, Hendra virus disease, Hanta pulmonary syndrome, Nipah virus disease, bovine spongiform encephalopathy (BSE) etc. The biology, epidemiology and diagnosis of globally and nationally important emerging/re-emerging diseases will be discussed as well as designing strategies for their prevention and control through rapid and effective response with appropriate knowledge and skill. Veterinary disaster preparedness. Early warning of disease, risk analysis, response to disease emergencies and disasters (flood, drought, release of gases, radiation etc.).	2
		VMW 829 B	Wildlife, Aquatic and Laboratory Animal Medicine Clinics II B Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond etc), under supervision. Each resident to maintain a detailed record of all activities in a case log book and get it checked by the supervising consultant.	2

			Year 2 Total CU	13
3	Semester 1	VMG 830	<p>Pathophysiological Considerations in Animal Diseases Environmental Physiology of Disease Agents and Disease Conditions, Predisposition, Susceptibility and Immune State of Individual Animals. Definition of the terms infection, disease, infectivity, virulence and pathogenicity. Host/agent relationships - creation of the carrier state, types of carrier state (true carrier, incubatory carrier and convalescent carrier), types of antigenic variation (antigenic drift and antigenic shifts), incubation period, prepatent period and period of communicability. Methods of transmitting infectious agents- contact, vehicular, and vector (biological, mechanical, transovarial and transtadial) transmissions. Extrinsic determinants of disease: climate (macroclimate and microclimate), soils and man/management (overcrowding, pollution, commingling, inbreeding, hygiene etc). Intrinsic determinants of disease in the host and the effects of species, breed, age and sex on frequency of occurrence of infection and disease; genetically determined susceptibilities (single gene, chromosomal abnormalities, multifactorial diseases), anatomic structure physiological status, hormonal, nutritional and immunological status, presence of disease or medication. Oxidative stress and its role in pathophysiology of diseases.</p> <p>Describing disease events in populations: Disease diagnosis, population at risk, distribution of disease events in time and space. Definition of the terms endemic disease, hyperendemic disease, mesoendemic disease, hypoendemic disease, epidemic disease, pandemic disease and sporadic disease.</p> <p>Introduction of the immune system – innate immunity, adaptive or acquired immunity, vaccines and vaccination, types of vaccines, goal of vaccination. Effect of environment on immune functions-The effects of ambient temperature, photoperiod and metabolic status are to be discussed. Fever, Hyperthermia, Hypothermia.</p>	3
		VMG 831	<p>Veterinary Economics and Animal Disease Control Review of basic concepts of control, prevention and eradication of diseases. Disease control options for endemic and transboundary animal diseases;</p>	3

			preventive and therapeutic strategies; economics of livestock production and disease management. Planning and evaluation of disease control policy including systems approach to livestock development, stages in the planning process (establishing goals and targets for animal health programme, project identification, design and appraisal, and project implementation, monitoring, control and evaluation) and the role of various scientific disciplines in the planning process.	
		VMW 839A	Wildlife, Aquatic and Laboratory Animal Medicine Clinics II A Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	
	Semester 2	VMG 832	Advanced Toxicology Toxicology and environmental sanitation; basic and clinical principles of organic, inorganic and physical agents of animal disease; diagnosis, management including general emergency measures. Diseases caused by farm chemicals, phytotoxins mycotoxins and zootoxins. Diseases caused by poisonous plants, snake and insect bites. Monitoring in the environment and animal food chain. Pollution and control, warming/Green House effect, erosion, deforestation, desertification, urbanization, solid waste and chemical pollution.	3
		VMG 833	Veterinary Pharmacology and Therapeutics Clinical pharmacology and ethno-veterinary therapeutics. Indications and contra-indications of common veterinary drugs and herbs. Therapeutic and prophylactic dosages of veterinary medicaments.	2
		VMW 839B	Wildlife, Aquatic and Laboratory Animal Medicine Clinics II B Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases.	

			Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	
			Year 3 Total CU	11
4	Semester 1	VMG 840	Veterinary Business Veterinary entrepreneurship; Business environment (under international, national, social and cultural milieu), business location; New venture creation and business growth – identification of business opportunities, business idea, start-ups, legal issues of start-up, legal forms of business, business growth strategies (internal and external), viability analysis of new venture, sources of fund, factors of choice of capital; Various consultancies and Business management practices – record keeping, managements of time, credit, stress and conflict, consumer services and safety/workplace management; Marketing-contemporary approaches, market development, Knowing your competitors in marketing, competitive strategies; Business evaluation techniques (e.g. SWOT analysis), and monitoring of business environment; Proposal writing- business planning including the need, process, attributes, structure and importance; ICT in business- information management, E-business, E-commerce, E-trading and Net work economy.	3
		VMW 849A	Wildlife, Aquatic and Laboratory Animal Medicine Clinics IV A Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	
		VMW 840	Advanced Zoo and Wildlife Health Management Effects of diseases on wild animals' especially rare and endangered species and on the functioning of the ecosystems. Diseases maintenance and transmission among wildlife populations. Conservation Medicine: ecosystem health, animal health and human health. Importance of Conservation Medicine. Endocrine disruptors and effects on human and Wildlife health. Global	3

	Semester 2		ecological change and Wildlife health. Environmental conditions and proliferation of disease. Biodiversity, climate change and emerging infectious diseases. Deforestation and its ecological sequelae (logging, road building, hunting, cross species infection).	
		VMW 849B	Wildlife, Aquatic and Laboratory Animal Medicine Clinics IV B Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	
		VMG 842	Case Study and Report Report of 20 cases thoroughly investigated and followed-up.	2
		VMG 843	Seminar Topics of clinical relevance are presented by each resident and graded.	2
			Year 4 Total CU	12
5	Semester 1	VMG 850	Project Conduct, documentation and presentation of an approved relevant clinical research project.	6
		VMW 859A	Wildlife, Aquatic and Laboratory Animal Medicine Clinics V A Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	3
	Semester 2	VMG 851	Seminar Project defense seminar.	2
		VMW 859B	Wildlife, Aquatic and Laboratory Animal Medicine Clinics V B Clinical exposures including visits to zoo/wildlife park, laboratory animal colonies, fish farms and fishing sites (streams, pond, lakes etc), under	3

			supervision. Diagnosis, treatment and control of clinical cases. Visits to local fish farms and markets for collection of samples for diagnosis of fish diseases. Diagnostic tests and preventive inoculations. Each resident should maintain an activity and case log book.	
			Year 5 Total CU	11
			TOTAL	

Theoretical, research and clinical papers are presented. Attendance, participation and presentation of seminar are mandatory for each resident.