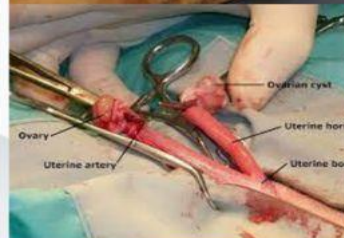
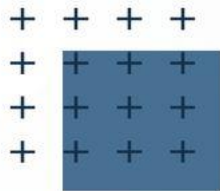


COLLEGE OF VETERINARY SURGEONS NIGERIA

SURGERY FACULTY



STUDENTS HANDBOOK



**COLLEGE OF VETERINARY
SURGEONS NIGERIA**

SURGERY FACULTY

STUDENTS HANDBOOK

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ACKNOWLEDGEMENT

We acknowledge the opportunity given to members of the Interim Management Committee 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. 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)

FORWARD

This edition of the College of Veterinary Surgeons Nigeria, Surgery Faculty Handbook is a review of the 2015/2020 issue as approved by the Senate of the College. The review was meant to address, deepen and adequately capture observed inadequacies in the previous edition as well as global developments and practices in specialist training in Veterinary Surgery.

It is a common knowledge that modern surgery is both an art and a science. The Surgery Faculty Handbook seeks to clarify the underpinning principles needed by a Resident for an understanding of surgical practice in animals.

The Handbook is quite succinct in title, content and applications. Terms, expressions including course codes and titles are clear, devoid of ambiguity and free from interpretative errors. It is detailed and equally more inclusive in terms of rules, regulations and guidelines regarding all matters concerned with the award of the fellowship of the College of Veterinary Surgeons Nigeria.

In putting this review together, adequate measures were taken to be responsive to anticipated future developments that may warrant further review to consistently strengthen the operational scope of the Handbook.

Residents are strongly advised to familiarise themselves with the contents of the Handbook as ignorance of the contents or changes will not be a tenable excuse. When in doubt, Residents and other stakeholders should seek counsel from appropriate organs of the College.

Best wishes.

Professor Joseph Fadeyemi Akinrinmade. FCVSN.
Acting Head, Surgery Faculty.

COLLEGE MANAGEMENT



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



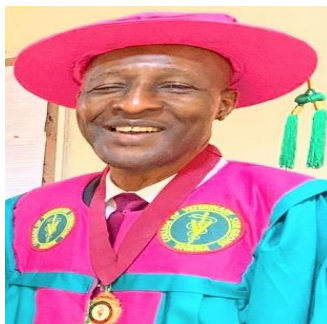
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PART 1

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

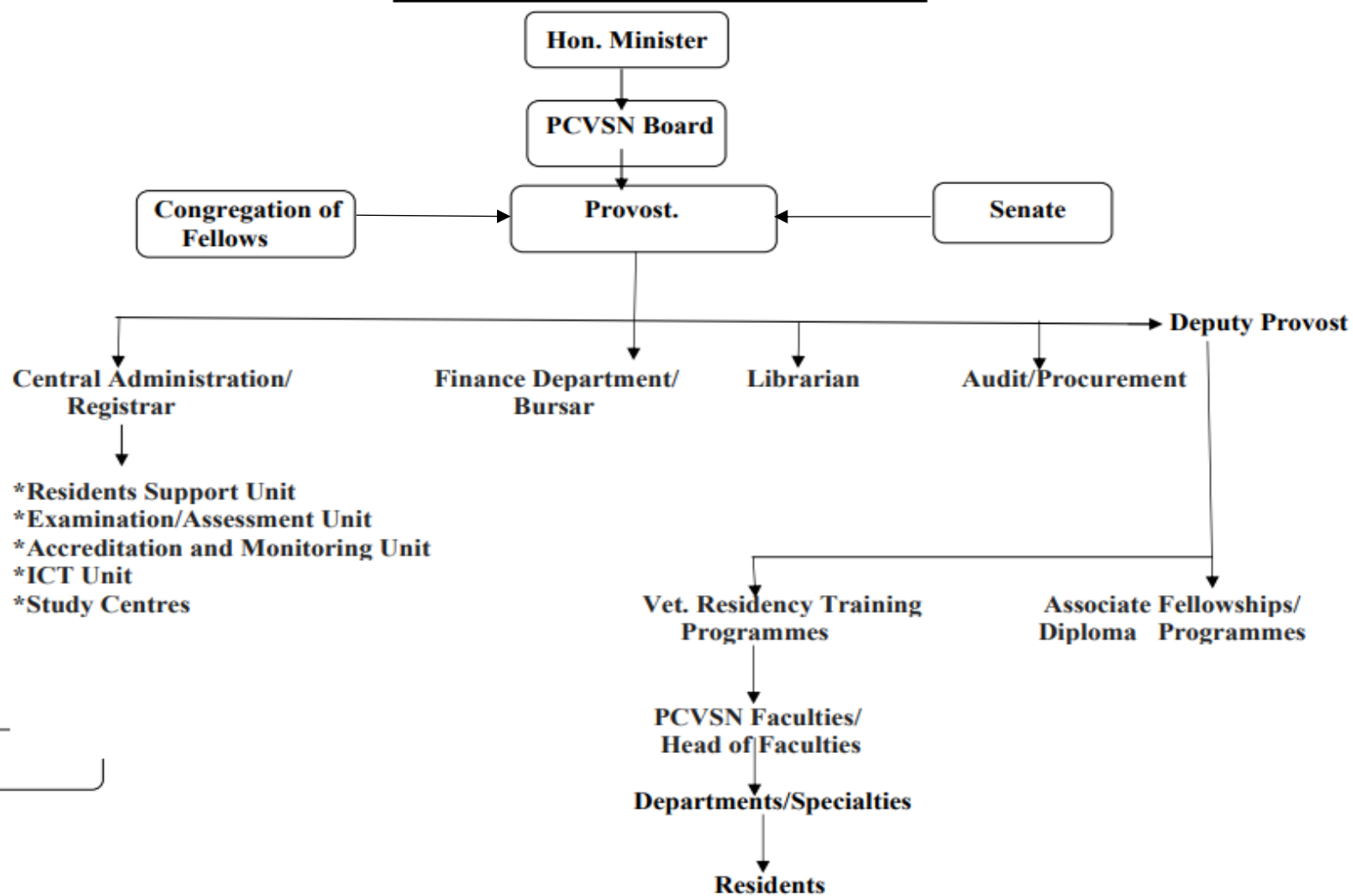
The Veterinary Council of Nigeria, for now, remains the financier and coordinating government agency for the College. There is at the moment for the purpose of directly administering the College Programmes an Interim Management Committee, an Interim College Senate, Faculty Academic Board as well as an 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. 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 CVSN 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 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

SURGERY 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 Study Centres are approved Study Centres for the Surgery Faculty.



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

2.1.2 CONTACTS

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2.2 SPECIALTY/OPTION COORDINATORS (HODs)

Theriogenology

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2.3 TRAINING OBJECTIVES

2.3.1 Theriogenology Fellowship:

1. To provide a broad understanding of the subject of Theriogenology (Small, Equine and Food Animals).
2. To provide an understanding of the approach to diagnosis of commonly encountered Theriogenology conditions in Large and Small Animals as well as their management.
3. To develop aptitude and skills in the diagnosis and manipulation of obstetrical conditions.
4. To satisfy the requirements for examination by the College of Veterinary Surgeons, Nigeria (CVSN).
5. To provide an advanced understanding of the subject of Theriogenology (Small, Equine and Food Animals).
6. To instruct in the art and science of Theriogenology and its allied discipline.
7. To provide an understanding of the approach to diagnosis of rare and complex Theriogenology conditions in Large and Small Animals as well as their management.
8. To develop aptitude and skills in the diagnosis and manipulation of obstetrical conditions.
9. To provide experience in the preparation of scientific articles for publication and/or presentation.
10. To satisfy the requirements for examination by the College of Veterinary Surgeons, Nigeria (CVSN).
11. To provide an opportunity to pursue career goals in teaching, research and clinical service in Theriogenology.

2.3.2 Year 1 & 2 Surgery Fellowship (Common to all Surgery Specialties except Theriogenology):

1. To provide a broad understanding of the subject of Surgery.
2. To achieve proficiency in techniques introduced to the students in their undergraduate study.
3. To improve the student's understanding of the approach and management of commonly encountered surgical cases.

2.3.3 Large Animal Surgery Fellowship Specialty/Option (Years 3 – 5)

1. To provide a broad understanding of the subject of Large Animal (Equine and Food Animal) surgery.
2. To provide an understanding of the design of a Large Animal surgical facility and its equipment.
3. To instruct in the art and science of Large Animal surgery and its allied discipline.
4. To provide an understanding of the approach to diagnosis of commonly encountered surgical disease of Large Animal Animals.
5. To develop aptitude and skills in the peri-operative care and operative treatment of Large Animal patients.
6. To have an understanding of pain management in Large Animals.
7. To provide experience in designing and conducting a clinical research project.
8. To provide experience in the preparation of scientific articles for publication and/or presentation.
9. To satisfy the requirements for examination by the College of Veterinary Surgeons, Nigeria (CVSN).
10. To provide an opportunity to pursue career goals in teaching, research and clinical service in Large Animal surgery.

2.3.4 Small Animal Surgery Fellowship Specialty/Option (Years 3 – 5)

1. To provide a broad understanding of the subject of small animal surgery.
2. To provide an understanding of the design of small animal surgical facility and its equipment.
3. To instruct in the art and science of small animal surgery and its allied discipline.
4. To provide an understanding of the approach to diagnosis of commonly encountered surgical disease of small animals.
5. To develop aptitude and skills in the peri-operative care and operative treatment of small animal patients.
6. To have an understanding of pain management in small animals.
7. To provide experience in designing and conducting a clinical research project.
8. To provide experience in the preparation of scientific articles for publication and/or presentation.
9. To satisfy the requirements for examination by the College of Veterinary Surgeons, Nigeria (CVSN).
10. To provide an opportunity to pursue career goals in teaching, research and clinical service in small animal surgery.

2.3.5 Anaesthesia Fellowship Specialty/Option (Years 3 – 5)

1. To provide an understanding of the broad subject of veterinary anaesthesia.
2. To provide an understanding of the function and operation of anaesthetic and monitoring equipment.
3. To instruct in the basic sciences relating to the practice of anaesthesia.
4. To relate patho-physiology of diseases and abnormalities of organ systems to anaesthetic management and life support.
5. To develop aptitude and clinical proficiency in anaesthetic management of diverse animal species for diagnostic, medical, obstetrical and surgical procedures.
6. To have an understanding of pain management in different species.
7. To provide experience in designing and conducting clinical research project.
8. To provide experience in the preparation of scientific articles for publication and/or presentation.
9. To satisfy the requirements for examination by the College of Veterinary Surgeons, Nigeria (CVSN).
10. To provide an opportunity to pursue career goals in teaching, research and clinical service in veterinary anaesthesia.

2.3.6 Diagnostic Imaging Fellowship Specialty/Option (Years 3 – 5)

1. To provide a general understanding of a variety of diagnostic imaging techniques used in veterinary medicine, with particular emphasis on radiology and diagnostic ultrasound.
2. To provide an understanding of the operation and maintenance of diagnostic facilities and equipment.
3. To instruct in the steps required to obtain an image of diagnostic quality.
4. To instruct in the normal and pathological anatomy and physiology, including biological and pharmacological actions of the materials administered to patients in diagnostic studies.
5. To develop aptitude and skills in the interpretation of radiographs and ultrasonograms.
6. To provide an understanding of the complementary role of both radiography and sonography.
7. To provide supervised experience in basic interventional procedures, such as image-guided biopsies and fine-needle aspirates.
8. To provide experience in designing and conducting clinical research project.
9. To provide experience in the preparation of scientific articles for publication and/or presentation.
10. To satisfy the requirements for examination by the College of Veterinary Surgeons, Nigeria (CVSN).
11. To provide an opportunity to pursue career goals in teaching, research and clinical service in veterinary diagnostic imaging.

2.4 PROGRAMME DESCRIPTION

2.4.1 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 Surgery Specialty 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. Human Medical facilities for Anaesthesiology and Diagnostic Imaging options.
- v. 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.

2.4.2 Guidelines for Surgery Faculty Residents Clinical Engagement:

1. All Surgery Faculty students are to dress appropriately and conduct themselves responsibly in Clinics/Surgery.
2. All Surgery 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.

2.4.3 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 Residency:

i. Theriogenology Clinics

- Identification and acquaintance with the use of Theriogenology equipment and facilities
- Use of milking machine and other milking procedures
- Examination of the udders, teat and performance of the Dip test
- Mastitis screening tests
- Examination of the male and female genitalia in various species.
- Identification of pathology in genitalia
- Examination of slides of genital pathology
- Determination of estrus in domestic animals.
- Breeding soundness examination in males of various species
- Breeding soundness examination in females of various species

- Determination of weights in animals
- Neonatal care services:
 - a. Warmth provision
 - b. Clean the foetal nostrils and oral cavity
 - c. Colostrum suckling
 - d. Artificial colostrum preparation
 - e. Examine for udder abnormalities and teat conformation
- Restraint and conduct of semen collection
- Semen collection methods:
 - a. Electro ejaculator method:
 - b. Rectal probe,
 - c. Artificial Vagina method:
 - d. Cloaca twisting method (poultry)
 - e. Masturbation in dogs
- Semen extension and evaluation
- Pregnancy diagnosis by visual inspection,

rectal/abdominal palpation and hormone assay in various species.

-Conduct a pregnancy diagnosis by

ii. Small Animal Surgery Clinics

- Use of Lasers in surgery
- Advanced pre surgical evaluation Protocols (BP, blood group, hydration status, blood glucose levels, hepatic and renal evaluation)
- Open heart surgery &vascular surgeries
- CNS surgery: craniotomy and laminectomy, spinal decompression
- Parotid duct transposition
- Lens replacement
- Cataract surgery
- Glaucoma Surgery
- Corneal grafts
- Organ transplants: kidney, bone and skin, bone marrow
- ASIF fixation of fractures
- Advance skin flap techniques
- Thoracotomy in dogs: thoracic oesophagostomy, lobectomy, thoracic fluid and air evacuation.
- Dental scaling, filing and care

iii. Large Animal Surgery Clinics

- Advance pre surgical evaluation protocols (BP, blood group, hydration status, blood Glucose levels, hepatic and renal evaluation)
- Surgeries of the neck in horses: laryngeal Ventriculectomy etc.
- Surgical management of abomasal displacement
- Surgery of the female reproductive tract: ovariectomy in the mare and caesarean section in ruminants.
- Identification and use of Surgical Instruments and equipment
- Identification and preparation of Surgical

Ultrasonography in various species

- Vascular cannulation & by pass
- Hepatectomy and splenectomy
- Use of surgical prosthesis: bone, ureter, vascular and urethra
- Endoscopy/Laparoscopic surgeries
- Joint arthrodesis
- Reconstructive surgeries: valgus deformity, otoplasty, penile and vulva reconstruction post-amputation
- Surgical emergencies
- Advances in wound mgt
- Wound dressing & mgt
- Middle and inner ear surgeries
- Pyloroplasty procedures
- Techniques in resection and anastomosis
- Open management of pelvic fractures

packs

- Identification and use of Wound Dressing Materials:
- Use of slings
- Identification and use of suture materials
- Preparation of Large Animal surgical patients.
- Surgical Team Preparation:
- Suture patterns
- Examine the shoe on horse
- Hoof cleaning and trimming
- Open castration in a boar
- Castration in piglets
- Pre- and post-operative evaluation in Large

Animals

- Relieve bloat
- Dehorning in a kid/goat

Elastrator and Burdizzo

Tail docking in sheep

Teat surgeries

Lameness evaluation.

iv. Diagnostic Imaging Clinics

- Diagnostic Imaging Instrumentation/ hardware
- Digital radiography
- Abdominal ultrasonography
- Genitourinary ultrasonography
- MUS in pregnancy assessment and diagnosis
- Ultrasonographic interpretation
- Soft tissue radiographic interpretation
- Contrast techniques: GIT, HSG, Pyelography, myelography, angiography, bronchography,

v. Anaesthesia Clinics

- General anaesthesia in ruminants and associated complications
- Management of acid-base imbalance
- Blood replacement
- Advances in intensive care
- Anaesthetic emergencies and management
- Pain management (general and peri-surgically)
- Local anaesthetic protocol in Small animals.
- Pre-operative clinical assessment - interpretation of laboratory data (haematology, serum biochemistry, urinalysis, blood gas analysis, etc) with reference to the preparation and suitability of an animal for sedation and/or anaesthesia.
- Analgesia - recognition of pain
- Application of analgesic techniques before, during and after a surgical procedure
- General anaesthesia:
 - a) anaesthetic administration equipment
 - b) anaesthetic monitoring equipment

- Advances in film processing; daylight processing,
- Filmless radiography: teleradiography, e-referral in radiography
- Techniques in CT and MRI
- Nuclear imaging
- Principles of radiation therapy
- Techniques in radiation therapy
- Review of radiographic techniques
- Development of radiographic technique chart
- Neuro-radiographic techniques

- c) intravenous anaesthesia
- d) inhalational anaesthesia
- e) muscle relaxation
- f) intermittent positive pressure ventilation
- g) care of the unconscious animal
- Fluid therapy - the principles and practice of fluid therapy
- Anaesthetic accidents and emergencies - recognition and treatment
- Local and regional analgesia - their application topically, by local infiltration, regional, epidural and spinal techniques in veterinary anaesthesia.
- Blood pressure and gas determination
- Intra-operative patient management: pulse oximeter, etc
- Intra-operative/emergency ventilation
- Cerebral-Cardiopulmonary resuscitation (CAB concept)
- Inhalation anaesthesia 1: Equipment, Maintenance and complications
- Anaesthetic emergencies

- Advances in shock management
- Anaesthetic support
- Special anaesthetic protocols (obesity, brachycephalics, trauma, liver and kidney disease patients,
- General anaesthesia in ruminants:

- General Anaesthesia in pigs
- General anaesthesia in horses
- General anaesthesia in reptiles, birds and exotic species
- Wildlife immobilization.

2.5 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).

2.6 LECTURES, PRACTICAL AND EXAMINATIONS

2.6.1 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.

2.6.2 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)

2.7 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.

2.8 LIST OF SURGERY FACULTY COURSES

Theriogenology

Year 1:

Semester 1:

SGS 811: Surgical Evaluation, Preparation and Instrumentation

THG 811: Basic Reproductive Anatomy and Physiology

THG 819 A: Theriogenology Clinics 1A

Semester 2:

THG 812: Reproductive Endocrinology; Lactation and Udder Health Management

THG 814: Theriogenology Clinical Procedures I

THG 819 B; Theriogenology Clinics 1 B

Year 2:

Semester 1:

THG 821: Control and Management of Reproduction

THG 823: Advanced Obstetrics

THG 829 A: Theriogenology Clinics II A

Semester 2:

THG 822: Surgical Procedures in Reproduction

THG 824: Theriogenology Clinical Procedures II

THG 829 B: Theriogenology Clinics II B

Year 3:

Semester 1:

THG 831: Immuno-reproduction

THG 833: Comparative Reproduction

THG 839 A: Theriogenology Clinics III A

Semester 2:

THG 832: Advanced Laboratory Diagnostic Techniques in Reproduction

THG 834: Maternal/Neonatal/Paediatric Care

SDI 833: Diagnostic Imaging in Pregnancy Evaluation

THG 839 B: Theriogenology Clinics III B

Year 4

Semester 1:

THG 841: Artificial Insemination Technology

SLA 845: Abdominal and Reproductive Surgeries

THG 843: Embryo Transfer and Reproductive Biotechnology

THG 849 A: Theriogenology Clinics IV A

Semester 2:

SAN 844: Anaesthetic Utilisation in Pregnancy and Parturition

THG 844: Herd Health Fertility Management

THG 846: Advanced Andrology

THG 849 B: Theriogenology Clinics IV B

Year 5:

Semester 1:

THG 859 A: Theriogenology Clinics V A

Semester 2:

THG 852: Project (6 Case Published Reports)

THG 859 B: Theriogenology Clinics V B

General Surgery (Years 1 & 2)

Year 1:

Semester 1:

SGS 811: Surgical Evaluations, Preparation & Instrumentation

SGS 813: Trauma and Traumatic Conditions

SAN 811: General Anaesthetic Instrumentation, Induction, Maintenance and Complications

SAN 813: Local Anaesthesia in Large Animals

SGS 819 A: General Surgery Clinics IA

Semester 2:

SAN 812: Introductory Intensive Care

ANA 812: Surgical Anatomy of the Dog, Cat & Basic Operative Techniques

ANA 814: Surgical Anatomy of Large Animals & Basic Operative Techniques

SGS 819 B: General Surgery Clinics IB

Year 2:

Semester 1:

SLA 821: Large Animal Gastro-intestinal and Reproductive Surgeries

SLA 823: Large Animal Lameness & Minimally Invasive LA Surgeries

SSA 821: Small Animal Orthopaedic Surgery

SSA 823: Small Animal Soft Tissue Surgeries

SGS 829A: Surgical Clinics II A

Semester 2:

SDI 822: Introductory Diagnostic Imaging

SAN 822: Sedation, tranquilisation and muscle relaxation

SLA 824: Large Animal Wet labs

SSA 824: Small Animal Wet labs

SGS 829B: Surgical Clinics II B

Large Animal Surgery

Year 3:

Semester 1:

SAN 831: Pain Evaluation and Management

SAN 832: Fluid Therapy & Intensive Care in Vet. Practice

SGS 832: Anaesthetic and Surgical Emergencies

SLA 839A: Large Animal Surgery Clinics III A

Semester 2:

SAN 838: Large Animal General Anaesthesia & Anaesthetic Patient Management

SGS 831: Endoscopy and Laparoscopic Surgeries

SLA 832: Large Animal Lameness, Orthopaedics & Miscellaneous Surgeries;

SLA 839B: LAS Clinics III B

Year 4:

Semester 1:

SLA 841: Avian and Exotic Animal Surgeries

SAN 841: Anaesthesia in Wildlife, Exotics, Aquatics and Avian Species

SLA 845: Abdominal and Reproductive Surgeries

SGS 844: Prosthesis in Veterinary Practice

SLA 849A: Large Animal Surgery Clinics IV A

Semester 2:

ANA 842: Equine Surgical Anatomy

SDI 845: Labs in Image Interpretation

SLA 848: Large Animal Surgical Labs

SLA 849B: LAS Clinics IV B

Year 5:

Semester 1:

SLA 859A: Large Animal Surgery Clinics VA

Semester 2:

SLA 851: Project

SLA 859B: Large Animal Surgery Clinics VB

Small Animal Surgery

Year 3:

Semester 1:

SAN 831: Pain Evaluation and Management

SAN 832: Fluid Therapy & Intensive Care in Veterinary Practice

SGS 832: Anaesthetic and Surgical Emergencies & Anaesthetic Patient Management

SGS 832: Surgical biology and physiology

SSA 839A: Small Animal Surgery Clinics IIIA

Semester 2:**SSA 831:** Cardiothoracic , Abdominal and Reproductive Surgeries**SSA 832:** Miscellaneous Small Animal Surgeries & Organ Transplantation; Surgical Oncology**SDI 838:** Small Animal Thoracic and Abdominal Radiography**SSA 836:** Advanced Orthopaedic Surgeries**SSA 839B:** SAS Clinics III B**Year 4:****Semester 1:****SGS 841:** CNS, Endoscopy and Laparoscopic Surgeries & Cryo, Thermo and Lasers in Surgery/Surgical Robotics**SAN 835:** Local Anaesthesia in Small Animals**SAN 841:** Avian and Exotic Animal Surgeries**SSA 844:** Small Animal Surgical Labs**SSA 849A:** Small Animal Surgery Clinics IV A**Semester 2:****SDI 846:** Labs in Image Interpretation**SSA 841:** Advanced Ophthalmic Surgeries, Oro-Dental Care and Surgery**SSA 849B:** SAS Clinics IV B**Year 5:****Semester 1:****SSA 859A:** Small Animal Surgery Clinics V A**Semester 2:****SSA 853:** Project**SSA 859B:** Small Animal Surgery Clinics V B**Anaesthesiology****Year 3:****Semester 1:****SAN 831:** Pain Evaluation and Management**SAN 833:** Intensive Care & Fluid Therapy in Veterinary Practice**SGS 835:** Anaesthetic and Surgical Emergencies; Anaesthetic Patient Management**SAN 834:** Anaesthesia for Diagnostic Imaging**SAN 839A:** Anaesthesia Clinics/Rounds III A**Semester 2:****SAN 838:** Large Animal General Anaesthesia**SAN 837:** Anaesthetic Equipment, Installation and Maintenance**SAN 836:** Special Anaesthetic Considerations**SAN 839B:** Anaesthesia Clinics III B**Year 4:****Semester 1:****SGS 843:** Anaesthetic Physiology and Pharmacology**SAN 843:** Anaesthetic procedures**SAN 841:** Anaesthesia in Wildlife, Exotics, Aquatics and Avian Species**SAN 849A:** Anaesthesia Clinics IV A

Semester 2;

SAN 842: Local Anaesthesia in Small Animals

SAN 844: Anaesthetic Utilisation in Pregnancy and Parturition

SAN 846: Euthanasia-Principles and Practice

SAN 849B: Anaesthesia Clinics IV B

Year 5:

Semester 1:

SAN 859A: Anaesthesia Clinics V A

Semester 2:

SAN 851: Project

SAN 859B: Anaesthesia Clinics V B

Diagnostic Imaging

Year 3:

Semester 1:

SAN 834: Anaesthesia in Diagnostic Imaging

ANA 834: Veterinary Radiographic Anatomy

SDI 831: Radiographic Instrumentation

SDI 833: Diagnostic Imaging in Pregnancy Evaluation

SDI 839A: Radiology Clinics III A

Semester 2:

SDI 832: Regulatory Protocols and Agencies

SDI 834: MUS, CT and MRI

SDI 836: Radiographic, MUS, CT and MRI Equipment & Maintenance

SDI 838: Small Animal Thoracic and Abdominal Radiography

SDI 839B: Radiology Clinics III B

Year 4:

Semester 1:

SDI 841: Principles and Applications of Radiotherapy ; Fundamentals of Nuclear Medicine

SDI 843: Radiation Biology and Radioprotection

SDI 845: Technique Chart Development and Utilisation

SDI 847: Contrast Materials in Diagnostic Imaging

SDI 849A: Radiology Clinics IV A

Semester 2:

SDI 842: Neuro-radiographic techniques

SDI 844: Nuclear Imaging and Thermography

SDI 846: Labs in Image Interpretation

SDI 849B; Radiology Clinics IV B

Year 5:

Semester 1:

SDI 859A: Diagnostic Imaging Clinics V A

Semester 2:

SDI 852: Project

SDI 859B: Diagnostic Imaging Clinics V B

Table 2.1: COURSE STRUCTURE FOR THE THERIOGENENOLOGY OPTION FELLOWSHIP PROGRAMME

Year of Study	Semester	Course Code	Course Title	Course Description	Credit Units
1	Semester 1	SGS 811	Surgical Evaluation, Preparation and Instrumentation	Pre-op patient evaluation, pre-op cleaning, shaving, draping and administration of medications. Surgical team preparation. Surgical facility design, equipment and maintenance. Instrumentation. Sterilisation and disinfection of surgical materials. Preparation and storage of linen and instrument packs. Preparation of the operative site. Preparation of the surgical team. Aseptic technique.	2
		THG 811	Basic Reproductive Anatomy and Physiology	Anatomy and physiology of the male and female reproductive organs in Large and Small animals	1
		THG 819 A	Theriogenology Clinics 1A	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. Monthly presentation of cases/activities virtually required.	3 (0-18)
	Semester 2	THG 812	Reproductive Endocrinology; Lactation and Udder Health Management	-Endocrine organs and secretions regulating reproductive activities, their use in manipulating reproduction. -Lactogenesis and lactation, anatomy and physiology of the mammary gland, conditions of the udder and their management. Control of galactoposis.	2
		THG 814	Theriogenology Clinical Procedures I	Learning basic techniques necessary for successful clinical practice, documentation and endorsement of procedures successfully performed.	3 (0-3)
		THG 819 B	Theriogenology Clinics 1 B	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. 1 month October Study Centre residency COMPULSORY . Monthly presentation of cases/activities virtually required.	3 (0-18)
					YEAR 1 TOTAL CU

2	Semester 1	THG 821	Control and Management of Reproduction	Oestrus detection and synchronization, mating and insemination techniques, embryo transfer, semen collection, processing and preservation, Physical , chemical and hormonal manipulations of reproductive activity in Large and Small animals	2	
		THG 823	Advanced Obstetrics	Development and abnormalities of the conceptus, Dystocia, Peri-parturient injuries & conditions.	2	
		THG 829 A	Theriogenology Clinics II A	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. Monthly presentation of cases/activities virtually required.	3 (0-18)	
	Semester 2	THG 822	Surgical Procedures in Reproduction	Indications for surgical intervention, surgical and obstetrical procedures in Large and Small Animals.	2 (1-1)	
		THG 824	Theriogenology Clinical Procedures II	Learning advanced techniques necessary for successful clinical practice, documentation and endorsement of procedures successfully performed.	3 (0-3)	
		THG 829 B	Theriogenology Clinics II B	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. 1 month October Study Centre residency COMPULSORY. Monthly presentation of cases/activities virtually required.	3 (0-18)	
				YEAR 2 TOTAL CU	15	
	3	Semester 1	THG 831	Immuno-reproduction	Immunological principles; Ag/Ab complexes; Immune response in infertility; Sperm & zona pellucida Ab.; Immunology of pregnancy; Maintenance of pregnancy (allograft)	1
			THG 833	Comparative Reproduction	Reproductive pattern in different species	1
THG 839 A			Theriogenology Clinics III A	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. Monthly presentation of cases/activities virtually required.	3 (0-18)	

4	Semester 2	THG 832	Advanced Laboratory Diagnostic Techniques in Reproduction	Chemical and hormone assays to determine pregnancy or state of the reproductive cycle.	2 (1-1)
		THG 834	Maternal/Neonatal/Paediatric Care	Conditions of the dam and foetus. Care of both dam and foetus postpartum.	1 (1 – 0)
		SDI 833	Diagnostic Imaging in Pregnancy Evaluation	Use of radiography and Ultrasonography in pregnancy diagnosis and foetal viability assessment.	2 (1-1)
		THG 839 B	Theriogenology Clinics III B	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. 1 month October Study Centre residency COMPULSORY. Monthly presentation of cases/activities virtually required.	3 (0-18)
				YEAR 3 TOTAL CU	14
	Semester 1	THG 841	Artificial Insemination Technology	AI & diseases control, Semen collection and processing, Breeding soundness evaluation	1
		THG 843	Embryo Transfer and Reproductive Biotechnology	Embryo recovery, Embryo evaluation management & transfer, Management of recipient	1
		SLA 845	Abdominal and Reproductive Surgeries	Surgical conditions and procedures in the abdominal cavity especially the vulva, vagina, uterus and ovaries	1
		THG 849 A	Theriogenology Clinics IV A	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. Monthly presentation of cases/activities virtually required.	3 (0-18)
	Semester 2	SAN 844	Anaesthetic Utilisation in Pregnancy and Parturition	Anaesthetic indications and contraindications in pregnancy. Parenteral, inhalation and local anaesthetic use in pregnancy. Effects of anaesthetic agents/drugs on foetal viability and development. Use of anaesthetics in CS and per-vaginal delivery of foetus.	1
THG 844		Herd Health Fertility Management	Infertility in herd health, Nutritional & hormonal imbalances & reproduction, Culture & mapping techniques, Mating & record systems.	1	
THG 846		Advanced Andrology	Male reproductive and urologic disorders. Infectious/inflammatory conditions e.g., balanitis; congenital disorders such as cryptorchidism, epi and	1	

				hypospadias; erectile dysfunction, penile fracture; penile neoplasm and testicular torsion.	
		THG 849 B	Theriogenology Clinics IV B	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook. 1 month October Study Centre residency COMPULSORY . Monthly presentation of cases/activities virtually required.	3 (0-18)
				YEAR 4 TOTAL CU	10
5	Semester 1	THG 859 A	Theriogenology Clinics V A	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook.	3 (0-18)
	Semester 2	THG 852	Project (6 Case Published Reports)	2 Cases worked up each session (Year 3 – 5) & Published. Defended, bound & forwarded for grading (PASS or FAIL)	6
		THG 859 B	Theriogenology Clinics V B	Management of Theriogenology cases and rounds in a hospital setting, documentation of relevant cases in designated logbook.	3 (0-18)
				YEAR 5 TOTAL CU	12
				TOTAL	64

Table 2.2: COURSE STRUCTURE FOR SURGERY FELLOWSHIP YEAR 1 & 2 PROGRAMME

Year of Study	Semester	Course Code	Course Title	Course Description	Credit Units
1	Semester 1	SGS 811	Surgical Evaluations, Preparation & Instrumentation	Pre-op patient evaluation, pre-op cleaning, shaving, draping and administration of medications. Surgical team preparation. Surgical facility design, equipment and maintenance. Instrumentation. Sterilisation and disinfection of surgical materials. Preparation and storage of linen and instrument packs. Preparation of the operative site. Preparation of the surgical team. Aseptic technique.	2
		SGS 813	Trauma and Traumatic Conditions	Traumatic conditions of the soft and skeletal tissues.	1
		SAN 811	General Anaesthetic Instrumentation, Induction, Maintenance and Complications	Airway equipment. Intravenous equipment. Anaesthetic machine. Breathing circuits. Monitors. Equipment maintenance; General anaesthetic agents, indications and administration, anaesthetic complications and Euthanasia	2
		SAN 813	Local Anaesthesia in Large Animals	Local anaesthetic protocols such as spinal blocks, regional blocks, infiltration, 'inverted L' blocks, corneal blocks etc.	1
		SGS 819 A	General Surgery Clinics IA	Management of Surgical cases and rounds in a hospital setting, documentation of relevant cases in designated logbook.	3
	Semester 2	SAN 812	Introductory Intensive Care	Emergency and critical conditions, resuscitation, nutritional support, Cardiopulmonary support, fluid therapy, physical therapy	1
		ANA 812	Surgical Anatomy of the Dog, Cat & Basic Operative Techniques	Gross anatomy, incision landmarks, approaches to abdominal cavity, thoracic cavity and skeletal structures. Laparotomy incisions, other surgical incisions,	2

				haemostasis, dissections, suction and drainage	
		ANA 814	Surgical Anatomy of Large Animals & Basic Operative Techniques	Gross anatomy, incision landmarks, approaches to abdominal and pelvic cavity. Laparotomy incisions, other surgical incisions, haemostasis, dissections, suction and drainage	2
		SGS 819 B	General Surgery Clinics IB	Management of Surgical cases and rounds at an approved facility within the 9 months off campus season, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian.	3
				YEAR 1 TOTAL	17
2	Semester 1	SLA 821	Large Animal Gastro-intestinal and Reproductive Surgeries	Basic surgeries of the oral cavity, oesophagus, rumen, intestines and the uterus.	1
		SLA 823	Large Animal Lameness & Minimally Invasive LA Surgeries	Lameness conditions in large Animals, conformation, gait and stance abnormalities; Minimally Invasive LA Surgeries	2
		SSA 821	Small Animal Orthopaedic Surgery	Skeletal conditions in Small Animals e.g., fractures, dislocations.	1
		SSA 823	Small Animal Soft Tissue Surgeries	Surgical conditions of soft tissues such as the gut, genitor-urinary system, integument, eye and ears	1
		SGS 829A	Surgical Clinics II A	Management of Surgical cases and rounds in a hospital setting, documentation of relevant cases in designated logbook.	3
	Semester 2	SDI 822	Introductory Diagnostic Imaging	Radiographic, MUS instrumentation, techniques in diagnostic imaging	1
		SAN 822	Sedation, tranquillisation and muscle relaxation	Principles of sedation, tranquilisation and muscle relaxation in Small, Large and Exotic species. Agents available and their administration.	1
		SLA 721 (October Residency)	Large Animal Wet labs	Selected Surgical exercises in Large Animals	2

		SSA 722 (October Residency)	Small Animal Wet labs	Selected Surgical exercises in Small Animals	2
		SGS 829B	Surgical Clinics II B	Management of Surgical cases and rounds at an approved facility within the Semester, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian.	3
				YEAR 2 TOTAL	17
				TOTAL	34

Table 2.3: COURSE STRUCTURE FOR SURGERY FELLOWSHIP YEAR 3 - 5 (LARGE ANIMAL SURGERY SPECIALTY/OPTION) PROGRAMME

Year of Study	Semester	Course Code	Course Title	Course Description	Credit Units
3	Semester 1	SAN 831	Pain Evaluation and Management	Concepts in animal pain. Physiological and pharmacological principles of pain control. Pain recognition and scoring in different species. Pre-emptive and multimodal analgesia. Acute pain management. Chronic pain management. Adjuncts to pain control.	1
		SAN 832	Fluid Therapy & Intensive Care in Vet. Practice	Indications for fluid therapy, selection of fluid, determination of volume and speed of administration, complications of administration.	1
		SGS 832	Anaesthetic and Surgical Emergencies	Accidents to personnel and the patient. Respiratory emergencies. Cardiovascular emergencies. Cardiopulmonary arrest and resuscitation.	1
		SLA 839A	Large Animal Surgery Clinics III A	Management of Large Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
	Semester 2	SAN 838	Large Animal General Anaesthesia & Anaesthetic Patient Management	Injectable anaesthetic agents. Methods of administration. Inhalant anaesthetic agents. Uptake and distribution. Airway maintenance. Oxygen supplementation. Artificial ventilation. Fluid therapy. Thermoregulatory control. Analgesia. Nutritional support. Physical therapy.	1
		SGS 831	Endoscopy and Laparoscopic Surgeries	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of selected endoscopic and laparoscopic protocols. Gastroscopy, laryngoscopy, enterostomy, tracheoscopy/bronchoscopy, abdominal laparoscopy.	1

4

		SLA 832	Large Animal Lameness, Orthopaedics & Miscellaneous Surgeries;	Lameness conditions in Large Animals especially horses. Diagnostic workup and surgical management of conditions.; Orthopaedic condition in Large Animals. Fractures, dislocations and luxation. Nutritional and metabolic as well as neoplastic bone conditions. Management of some general conditions such as herniorrhaphy, Laryngeal ventriculostomy, wounds etc.	2
		SLA 839B	LAS Clinics III B	Management of Large Animal surgical cases at an approved facility within the Semester & documentation of relevant cases in designated logbook and endorsement by supervising veterinarian.	3
				YEAR 3 TOTAL	14
Semester 1		SLA 841	Avian and Exotic Animal Surgeries	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications surgical conditions in Avian and exotic species (pet reptiles etc).	1
		SAN 841	Anaesthesia in Wildlife, Exotics, Aquatics and Avian Species	Laboratory animal anaesthesia. Avian anaesthesia. Fish anaesthesia. Reptile anaesthesia. Wildlife anaesthesia.	1
		SLA 845	Abdominal and Reproductive Surgeries	Surgical conditions and procedures in the abdominal cavity, GI structures, the vulva, vagina, uterus and ovaries	1
		SGS 844	Prosthesis in Veterinary Practice	Indications and types of prosthesis. Preparation and techniques of application. Limb prosthesis, eye and beak prosthesis etc.	1
		SLA 849A	Large Animal Surgery Clinics IV A	Management of Large Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
Semester 2		ANA 842	Equine Surgical Anatomy	Anatomic review of food animal and the equine.	1
		SDI 845 (October Residency)	Labs in Image Interpretation	Evaluation and interpretation of relevant radiographs. Appropriate documentation of findings.	1
		SLA 848 (October Residency)	Large Animal Surgical Labs	Surgical exercises in selected but challenging surgical procedures in the equine and ruminant species.	2

		SLA 849B	LAS Clinics IV B	Management of Large Animal surgical cases at an approved facility within the Semester, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian.	3
5				YEAR 4 TOTAL	13
	Semester 1	SLA 859A	Large Animal Surgery Clinics VA	Management of Large Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
	Semester 2	SLA 851	Project	Conduct, documentation and presentation of an approved relevant clinical research project.	6
		SLA 859B	Large Animal Surgery Clinics VB	Management of Large Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
					YEAR 5 TOTAL
				TOTAL	39

Table 2.4: COURSE STRUCTURE FOR THE SURGERY FELLOWSHIP YEAR 3 - 5 (SMALL ANIMAL SURGERY OPTION) PROGRAMME

Year of Study	Semester	Course Code	Course Title	Course Description	Credit Units
3	Semester 1	SAN 831	Pain Evaluation and Management	Concepts in animal pain. Physiological and pharmacological principles of pain control. Pain recognition and scoring in different species. Pre-emptive and multimodal analgesia. Acute pain management. Chronic pain management. Adjuncts to pain control.	1
		SAN 832	Fluid Therapy & Intensive Care in Veterinary Practice	Indications for fluid therapy, selection of fluid, determination of volume and speed of administration, complications of administration. Intensive care for Small animals. Life support and resuscitation	2
		SGS 832	Anaesthetic and Surgical Emergencies & Anaesthetic Patient Management	Accidents to personnel and the patient. Respiratory emergencies. Cardiovascular emergencies. Cardiopulmonary arrest and resuscitation. Airway maintenance. Oxygen supplementation. Artificial ventilation. Fluid therapy. Thermoregulatory control. Analgesia. Nutritional support. Physical therapy.	2
		SGS 832	Surgical biology and physiology	Body's response to injury. Haemostasis, shock, infection. Wound healing, Micro & macrophysiologic response to surgery,	1
		SSA 839A	Small Animal Surgery Clinics IIIA	Management of Small Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
	Semester 2	SSA 832	Miscellaneous Small Animal Surgeries & Organ Transplantation; Surgical Oncology	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of ear surgeries. Indications for plastic and reconstructive surgical procedures. Tension-relieving techniques. Skin flaps. Axial pattern flaps. Myocutaneous and muscle flaps. Skin grafts. Mesh skin grafts. Free skin flaps transfer. Tissue expanders. Indications and types of prosthesis. Preparation and techniques of application. Limb prosthesis, eye and beak prosthesis etc. Principles of tumour biology and staging. Paraneoplastic syndromes. General approach to the cancer patient. Principles of oncologic surgery,	2

				chemotherapy and radiotherapy. Management of common canine and feline neoplasms. Oncologic emergencies.	
		SSA 831	Cardiothoracic , Abdominal and Reproductive Surgeries	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of thoracotomy, pulmonary lobectomy, thoracic oesophageal surgeries, open heart surgeries, vascular surgeries and diaphragmatic ruptures.; Surgical conditions and procedures in the abdominal cavity such as the GI and accessory organs as well as the reproductive organs especially the vulva, vagina, uterus and ovaries	2
		SDI 838	Small Animal Thoracic and Abdominal Radiography	Indications, preparations, positioning for radiography of the thoraco-abdominal walls, heart, lungs, diaphragm, GI, kidneys, ureter, bladder and urethra. Abdominal and thoracic cavities.	1
		SSA 836	Advanced Orthopaedic Surgeries	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of fractures, dislocations/luxation. Congenital and metabolic bone conditions. Limb lengthening, Bone transplants.	1
		SSA 839B	SAS Clinics IIIB	Management of Small Animal surgical cases at an approved facility within the Semester, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian. Minimum of 16 hrs/week for the duration of the Semester.	3
				YEAR 3 TOTAL	18
		SGS 841	CNS, Endoscopy and Laparoscopic Surgeries & Cryo, Thermo and Lasers in Surgery/Surgical Robotics	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of congenital or traumatic spinal conditions. Cranial fractures and brain surgeries such as tumours, intracranial haemorrhage, cysts etc. Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of selected endoscopic and laparoscopic protocols. Gastroscopy, laryngoscopy, enteroscopy, tracheoscopy/bronchoscopy, abdominal laparoscopy.	2

4	Semester 1			Indications, technique and complications of cryosurgery, thermo surgery as well as lasers in modern surgeries. Indications and techniques for the use of robots in direct and remote surgeries.	
		SAN 842	Local Anaesthesia in Small Animals	Forms of local anaesthesia used in Small Animals, agents, indications and limitations.	1
		SAN 841	Avian and Exotic Animal Surgeries	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications surgical conditions in Avian and exotic species (pet reptiles etc).	1
		SSA 844 (October Residency)	Small Animal Surgical Labs	Surgical exercises in selected challenging operative procedures such as limb reattachments, cranial and open-heart surgeries, vascular surgeries and reconstructive surgeries.	1
		SSA 849A	Small Animal Surgery Clinics IV A	Management of Small Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
	Semester 2	SDI 846 (October Residency)	Labs in Image Interpretation	Evaluation and interpretation of relevant radiographs and sonographs. Appropriate documentation of findings.	1
		SSA 841	Advanced Ophthalmic Surgeries, Oro-Dental Care and Surgery	Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of ophthalmic surgical conditions such as cataract, glaucoma, retinal detachment and ocular prosthesis Indications, preop care, anaesthesia, anatomy, approach, procedure, postop care and complications of Surgical conditions of the dentition, palate, tongue and pharynx.	2
		SSA 849B	SAS Clinics IV B	Management of Small Animal surgical cases at an approved facility within the Semester, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian.	3
				YEAR 4 TOTAL	14
	Semester 1	SSA 859A	Small Animal Surgery Clinics V A	Management of Small Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
		SSA 853	Project	Conduct, documentation and presentation of an approved relevant clinical write-up & 6 Publications.	6

5	Semester 2	SSA 859B	Small Animal Surgery Clinics V B	Management of Small Animal surgical cases in a hospital setting, documentation of relevant cases in designated logbook.	3
				YEAR 5 TOTAL	12
			TOTAL		44

**TABLE 2.5: COURSE STRUCTURE FOR THE SURGERY FELLOWSHIP YEAR 3 - 5 (ANAESTHESIOLOGY OPTION)
PROGRAMME**

Year of Study		Course Code	Course Title	Course Description	Credit Units
3	Semester 1	SAN 831	Pain Evaluation and Management	Concepts in animal pain. Physiological and pharmacological principles of pain control. Pain recognition and scoring in different species. Pre-emptive and multimodal analgesia. Acute pain management. Chronic pain management. Adjuncts to pain control.	1
		SAN 833	Intensive Care & Fluid Therapy in Veterinary Practice	Indications for fluid therapy, selection of fluid, determination of volume and speed of administration, complications of administration. Intensive care for food animals and equine species. Life support and resuscitation Intensive care for Small animals. Life support and resuscitation	2
		SGS 835	Anaesthetic and Surgical Emergencies; Anaesthetic Patient Management	Accidents to personnel and the patient. Respiratory emergencies. Cardiovascular emergencies. Cardiopulmonary arrest and resuscitation. Airway maintenance. Oxygen supplementation. Artificial ventilation. Fluid therapy. Thermoregulatory control. Analgesia. Nutritional support. Physical therapy.	2
		SAN 834	Anaesthesia for Diagnostic Imaging	Sedation or anaesthetic use in Small Animal and Equine Diagnostic Imaging procedures.	1
		SAN 839A	Anaesthesia Clinics/Rounds III A	Management of Anaesthetized patient's cases in a hospital setting, documentation of relevant cases in designated logbook.	3
	Semester 2	SAN 838	Large Animal General Anaesthesia	Injectable anaesthetic agents. Methods of administration. Inhalant anaesthetic agents. Uptake and distribution.	1
		SAN 837	Anaesthetic Equipment, Installation and Maintenance	Anaesthetic administration and monitoring equipment. Installation and operations, maintenance of anaesthetic equipment.	1
		SAN 836	Special Anaesthetic Considerations	Cardiac disease. Respiratory disease. Hepatic disease. Renal disease. Neurological disease. Trauma. Diabetes. Hyper/hypoadrenocorticism. Pheochromatoma. Gastric dilatation-volvulus. Hyperthyroidism. Malignant hyperthermia, Obesity,	1

4				Paediatrics. Thoracic Surgeries, Geriatrics. Brachycephalic breeds. Sight hounds.	
		SAN 839B	Anaesthesia Clinics III B	Management of Anaesthetized patients at an approved facility within the Semester, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian. Minimum of 8 hrs/week for the duration of the vocation.	3
				YEAR 3 TOTAL	16
	SEMESTER 1	SGS 843	Anaesthetic Physiology and Pharmacology	The cell. Body fluids. The blood. Cardiovascular system. Respiratory system. Nervous system. Endocrines. The liver. The kidney. Mechanisms of drug action. Pharmacokinetics. Pharmacodynamics. Sedatives. Analgesics. Injectable anaesthetics. Inhalant anaesthetics. Muscle relaxants. Local anaesthetics.	2
		SAN 843	Anaesthetic procedures	Equipment assembly and checks. Patient evaluation for anaesthetic fitness. Preanaesthetic medication. Intravenous access. Induction of anaesthesia. Endotracheal intubation. Maintenance of anaesthesia. Monitoring anaesthesia. Recovery from anaesthesia. Records.	1
		SAN 841	Anaesthesia in Wildlife, Exotics, Aquatics and Avian Species	Laboratory animal anaesthesia. Avian anaesthesia. Fish anaesthesia. Reptile anaesthesia. Wildlife anaesthesia.	1
		SAN 849A	Anaesthesia Clinics IV A	Management of Anaesthetized patients' cases in a hospital setting, documentation of relevant cases in designated logbook.	3
	SEMESTER 2	SAN 844	Anaesthetic Utilisation in Pregnancy and Parturition	Anaesthetic indications and contraindications in pregnancy. Parenteral, inhalation and local anaesthetic use in pregnancy. Effects of anaesthetic agents/drugs on foetal viability and development. Use of anaesthetics in CS and per-vaginal delivery of foetus.	1
		SAN 842	Local Anaesthesia in Small Animals	Forms of local anaesthesia used in Small Animals, agents, indications and limitations.	1
		SAN 846	Euthanasia-Principles and Practice	Concepts and indications for euthanasia, Agents and techniques. Legal framework for euthanasia.	1

		SAN 849B	Anaesthesia Clinics IV B	Management of Anaesthetized patients at an approved facility within the 9 months off campus season, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian. Minimum of 8 hrs/week for the duration of the vocation.	3
				YEAR 4 TOTAL	12
5	SEMESTER 1	SAN 859A	Anaesthesia Clinics V A	Management of Anaesthetized patients' cases in a hospital setting, documentation of relevant cases in designated logbook.	3
	SEMESTER 2	SAN 851	Project	Conduct, documentation and presentation of an approved relevant clinical research project.	6
		SAN 859B	Anaesthesia Clinics V B	Management of Anaesthetized patients' cases in a hospital setting, documentation of relevant cases in designated logbook.	3
				YEAR 5 TOTAL	12
				TOTAL	40

**TABLE 2.6: COURSE STRUCTURE FOR THE SURGERY FELLOWSHIP YEAR 3 - 5 (DIAGNOSTIC IMAGING OPTION)
PROGRAMME**

Year of Study		Course Code	Course Title	Course Description	Credit Units
3	Semester 1	SAN 834	Anaesthesia in Diagnostic Imaging	Indications for and use of sedatives, muscle relaxants or anaesthetics in diagnostic imaging protocols	1
		ANA 834	Veterinary Radiographic Anatomy	Normal radiographic anatomy of the skeletal and thoraco-abdominal organs in dogs and the limbs, cranium and cervical vertebrae in horses	2
		SDI 831	Radiographic Instrumentation	X-ray facility and equipment. Design and types of x-ray machines. Production and properties of x-rays. Scattered radiation. Radiation safety. Positioning and standard projections. Recording the radiographic image. Film processing. Assessing radiographic quality. Radiographic interpretation. Digital and Teleradiography	1
		SDI 833	Diagnostic Imaging in Pregnancy Evaluation	Use of radiography and Ultrasonography in pregnancy diagnosis and foetal viability assessment.	1
		SDI 839A	Radiology Clinics III A	A case-method of instruction in diagnostic imaging in the hospital environment. Film reading	3
		SDI 832	Regulatory Protocols and Agencies	Local, state, national and universal regulations of radiation producing devices. Protocols and declarations in radiation and nuclear control. Disposal of radiation equipment.	1
	Semester 2	SDI 834	MUS, CT and MRI	Concepts, techniques and indications for the use of Medical ultrasonography, Computerised Tomography and Magnetic Resonance Imaging.	2
		SDI 836	Radiographic, MUS, CT and MRI Equipment & Maintenance	Maintenance, cleaning and storage of machines. Regulation of use and servicing. Signs of malfunction etc.	1
		SDI 838	Small Animal Thoracic and Abdominal Radiography	Indications, preparations, positioning for radiography of the thoraco-abdominal walls, heart, lungs, diaphragm, GI, kidneys, ureter, bladder and urethra. Abdominal and thoracic cavities.	1
		SDI 839B	Radiology Clinics III B	Diagnostic imaging services at an approved facility within the Semester, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian.	3
					YEAR 3 TOTAL

4	Semester 1	SDI 841	Principles and Applications of Radiotherapy ; Fundamentals of Nuclear Medicine	Instrumentation, indications, Principles and application of nuclear medicine Instrumentation, indications, Principles, Techniques and utilization of radiotherapy	1
		SDI 843	Radiation Biology and Radioprotection	Effects of radiation on living tissues and organism, radiation protection and amelioration of damage. Techniques and equipment in radio-protection. Patient and personnel protection.	1
		SDI 845	Technique Chart Development and Utilisation	Technique chart development and utilization for canine and equine species.	1
		SDI 847	Contrast Materials in Diagnostic Imaging	Types of contrast media. Barium swallows. Barium meal and follow through. Barium enema. Peritoneography. Sialography. Intravenous urography. Cystogram. Male urethrogram. Female urethrogram. Myelogram. Discography. Arthrography. Sinography.	1
		SDI 849A	Radiology Clinics IV A	A case-method of instruction in diagnostic imaging in the hospital environment. Film reading	3
	Semester 2	SDI 842	Neuro-radiographic techniques	Radiographic evaluation of the cranium, brain, spinal canal and contents.	1
		SDI 844	Nuclear Imaging and Thermography	Concepts, techniques and indications for the use of Nuclear Imaging and Thermography	1
		SDI 846 (October Residency)	Labs in Image Interpretation	Evaluation and interpretation of relevant radiographs and sonographs. Appropriate documentation of findings.	2
		SDI 849B	Radiology Clinics IV B	Diagnostic imaging services at an approved facility within the Semester, documentation of relevant cases in designated logbook and endorsement by supervising veterinarian.	3
	5			YEAR 4 TOTAL	14
Semester 1		SDI 859A	Diagnostic Imaging Clinics V A	A case-method of instruction in diagnostic imaging in the hospital environment/Film reading	3
Semester 2		SDI 852	Project	Conduct, documentation and presentation of an approved relevant 6 Case presentation earlier published	6
		SDI 859B	Diagnostic Imaging Clinics V B	A case-method of instruction in diagnostic imaging in the hospital environment/Film reading	3

				YEAR 5 TOTAL	12
				TOTAL	42

Note: *CU for Clinics (3CU/Semester) uniform across all Faculties & Specialties/Options

***Monthly virtual presentations of cases/activities required for all Faculties & Specialties/Options**

***Clinics from Yr 1 – 5 in all Faculties & Specialties/Options**

***Clinic exams applies to all levels of study & Specialties/Options**

*** Project shall be a bound representation of the 6 Clinical publications made & applies to all Faculties & Specialties/Options**

