FACULTY OF HEALTH SCIENCES &
VETERINARY MEDICINE

School of Veterinary Medicine

Prospectus 2025

UNAM

PROSPECTUS 2025

SCHOOL
OF
VETERINARY MEDICINE

NOTE

This Prospectus is only valid for 2025 as regulations and syllabi may be amended for 2025. The general regulations and further information appear in the General Information and Regulation Prospectus. Although the information contained in this Prospectus has been compiled as accurately as possible, it is possible that errors and omissions have inadvertently occurred, for which we apologise in advance. The University reserves the right to amend any regulation or stipulation without notice. The information is correct up to 30 November 2025.

The fact that particulars of a specific module or programme have been included in this Prospectus does not necessarily mean that the module or programme will be offered in 2025. This Prospectus must be read in conjunction with the *General Information and Regulations Prospectus 2025*.

SCHOOL OF VETERINARY MEDICINE PREAMBLE

At the heart of veterinary medicine lies a profound commitment to the health and well-being of animals, humans, and the environment. The School of Veterinary Medicine stands as a beacon for advancing knowledge, fostering compassion, and driving innovation in the veterinary sciences.

The school of recognize the vital interconnection between animal health, public health, and ecological balance, aligning with the principles of One Health to address global challenges. With a steadfast dedication to excellence in education, research, and clinical practice, the school prepare students to become leaders in veterinary medicine, equipping them not only with technical expertise but also with the ethical grounding and empathy necessary to serve diverse communities.

Through collaboration, inclusivity, and a passion for discovery, the school empower it's graduates to safeguard animal welfare, protect public health, and contribute to a sustainable future for all living beings.

UNAM 2025 CORE DATES

SEMESTER 1	
09 January	University Open
21 January	Academic Staff Resumes Office Duties
17 April	First Semester Break commences for students (Until 23 April)
17 April	Vacation School Commerce for Distance Student (Until 28 March)
24 April	Lectures resume After FIRST SEMESTER BREAK
27 May	Institutional Holiday
11 July	End of FIRST SEMESTER
14-18 July	Mid-Year Break
SEMESTER 2	
25 August	Second semester BREAK for student commences (Until 29 August)
25 August	Vacation School commence for distance student (Until 29 August)
01 September	Lectures resume after SECOND SEMESTER BREAK
05 December	End of Second Semester
12 December	End of Academic Year
2026 ACADEMIC YEAR	
8 January	University opens for 2026 academic year
20 January	Academic staff resumes office duty for 2026 academic year

CANCELLATION DATES

DATE	DESCRIPTION
31 January	Last day to cancel Core Semester modules with 100% credit
05 February	Last day to cancel core semester modules with 100% credit – New curriculum students
14 February	Last day to cancel Core Semester modules with 50% credit
21 February	Last day to cancel Core Semester modules
21 February	Last day to cancel Semester 1 and Year modules with 100% credit (Old curriculum students)
14 March	Last day to cancel Semester 1 and Year modules with 100% credit (New curriculum students)
14 March	Last day to cancel Semester 1 modules with 50% credit (Old curriculum students)
14 April	Last day to cancel Semester 1 modules with 50% credit (New curriculum students)
28 April	Last day to cancel Semester 1 modules (All students) with 0% credit
7 July	Last day to cancel Year modules with 50% credit (All students)
11 August	Last day to cancel Semester 2 modules with 100% credit (All students)
1 September	Last day to cancel second semester modules with 50% credit – All students
29 September	Last day to cancel second semester and year modules (All Students) with 0% credit

Due Dates for the 2025 Academic Year

DATE	DESCRIPTION
24 January	Last day to apply for promotional exams (Final year students repeating one module to graduate in spring)
3 February	Last day to apply for re-mark for second semester and year modules.
7 February	Last day for approval of module(s) and qualification mode changes of First year students
14 February	Application for module(s) exemptions ends for First year students
14 March	Last day for approval of module(s) and qualification mode changes of Senior students
28 April	Last day to change offering types
25 July	Last day to apply for addition and cancellation of SECOND SEMESTER modules (starting 21 July)
1 August	Last day to apply for remark of first semester modules (starting 21 July)
1 September	Last day to submit outstanding documentation (please ensure you submit outstanding documents or you will be deregistered after deadline)
29 September	Last day to change offering types of second semester and year modules.
31 October	Last day to submit Theses and Dissertations for examinations (Postgraduate/High Degree Students)

ACADEMIC DEPARTMENTS

ASSOCIATE DEAN (Neudamm Campus)

☎ (+264 61) 2064043 amarais@unam.na ✉ Private bag 13301, Windhoek, Namibia

Associate Dean:	Dr A Marais: BVSc (University of Pretoria); BSc (Hons); MSc (Stellenbosch University); PhD (University of Pretoria)
Administrative Officer:	Mrs. Laivi Cardoso: Higher Diploma in Business Information System
Assistant Faculty Officer:	Vacant
Adjunct - Psychologist:	Ms B Hoffmann: MA (Ind & Org Psych), PCC (ICF), CPRP (PRISA), CHRP (IPMN

DEPARTMENT of VETERINARY PRE-CLINICAL STUDIES (Neudamm Campus)

☎ (+264 61) 2064001 schitanga@unam.na ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Prof S Chitanga: BVSc (University of Zimbabwe); MSc (Institute of Tropical Medicine, Belgium); PhD in Veterinary Medicine (University of Ghent, Belgium).
Senior Lecturer:	Dr B Mushonga: BSc (Hons) Veterinary Anatomy; BVSc (University of Zimbabwe); MSc Veterinary Pathology (University of Utrecht)
Senior Lecturer:	Dr C Musara: MSc (University of Liverpool, UK). BVSc (University of Zimbabwe, Zimbabwe). MSc, (University of Zimbabwe, Zimbabwe).
Associate Professor:	Prof O Madzingira: BVSc (University of Zimbabwe); MPhil (University of Zimbabwe); MMed Vet (University of Pretoria); PhD in Veterinary Science (University of Pretoria).
Senior Lecturer:	Dr B Kaurivi: BSc (Biology) (University of Namibia); BVSc (University of Zimbabwe); MVSc (University of Sidney); PhD (Massey University)
Lecturer:	Dr B Chiwome: BVSc (University of Zimbabwe)
Lecturer:	Dr S Chinyoka: MSc (Tropical Animal Health, University of Pretoria) BVSc (University of Zimbabwe, Zimbabwe)
Lecturer:	Dr E Muradzwika: BVSc (University ofZimbabwe)
Assistant Lecturer:	Dr E. Hoebes: BVM (University of Namibia)
Senior Technologist:	Mr M Hanghome: Nat. Dip. NRM Nature Conservation (Namibia University of Science and Technology); B Degree Environmental Engineering (Cape Peninsula University of Technology); MSc Environmental Management (University of the Free State)
Vet. Para-professional:	Mr U Ujava: Higher Dip Agric (UNAM)
Vet. Para-professional:	Ms CO Matomola: Dip. Anim. Health (University of Namibia) Technologist
Vet. Para-professional:	Ms. V N Ndjoze-Siririka: BSc (Hons) Microbiology (University of Namibia)
Technologist:	Ms E Mwenda: BSc (Hons) (University of Namibia, Namibia), BSc – Environmental Biology and Molecular and Physiological Biology (University of Namibia, Namibia)
Field Technician:	Mr N Simasiku: Dip Anim Health (University of Namibia)

DEPARTMENT of VETERINARY PRE-CLINICAL STUDIES (Neudamm Campus)

☎ (+264 61) 2064055 mhemberger@unam.na ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Dr M Y Hemberger: DVM (Giessen University – Germany); PhD (Giessen University –Germany)
Associate Professor:	Prof C Ntahonshikira: BVM, MSc (National Agricultural University of Ukraine); PhD (Kiev Veterinary Research Institute)
Associate Professor	Prof S Khaiseb: DVM (Kazan State Veterinary Academia, Russia), Dr med vet (Institute of Veterinary Pathology, University of Zurich)
Senior Lecturer:	Dr J Yabe: BVM (University of Zambia), MSc. (University of Zambia); PhD (Hokkaido University, Japan)
Senior Lecturer:	Dr F Chitate: BVSc (University of Zimbabwe); MSc (University of Reading)
Lecturer:	Dr D Mudimba: BVSc (University of Zimbabwe)
Staff Development Fellow:	Dr Eugene A Jacobs: Diploma in Animal Health, (Cum laude); BVM (University of Namibia)
Staff Development Fellow:	Dr Leandra van Zyl: BVM (University of Namibia)
Technologist:	Ms K Mwaningange: National Diploma in Agriculture (University of Namibia); BSc Agric (Hons) Food Science and Tech (University of Namibia)
Technologist:	Ms M M N Amukwaya: BSc (Hons) Microbiology and Chemistry (University of Namibia); MSc Clinical Microbiology and Infectious Diseases (University of Edinburgh)
Technologist:	Mr. A Shoolongela: National Diploma in Agriculture (University of Namibia), BSc (Hons) Food Science and Tech (University of Namibia)
Vet. Para-professional:	Mr. J. Simataa: Diploma in Animal Health (University of Namibia)

DEPARTMENT OF COMPANION ANIMAL CLINICAL STUDIES (Neudamm Campus)

☎ (+264 61) 2064168 araath@unam.na ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Dr A Raath: BVSc (University of Pretoria)
Senior lecturer:	Dr A Marais: BVSc (University of Pretoria); BSc (Hons); MSc (Stellenbosch University); PhD (University of Pretoria)
Senior lecturer:	Dr L De Villiers: BSc, BVSc, MSc (University of Pretoria)
Adjunct Lecturer:	Prof J Schoeman: BVSC, MMedVet, PhD (University of Pretoria)
Adjunct Lecturer:	Dr V McClure: BVSc, M. Med. Vet (University of Pretoria)
Adjunct Lecturer:	Dr D Marggraff: BVSc (University of Pretoria)
Veterinary Nurse:	Dr W Thomas: BVM (Sokoine University of Agriculture, Tanzania)
Staff Development Fellow:	Dr P Nghinamito: BVM (University of Namibia)
Staff Development Fellow:	Dr N Williams: BVM (University of Namibia)
Vet. Para-professional:	Mr B Muzo: Dip. Animal Health (University of Namibia)

DEPARTMENT OF PRODUCTION ANIMAL CLINICAL STUDIES (Neudamm Campus)

☎ (+264 61) 2064111 asamkange@unam.na ✉ Private bag 13301, Windhoek, Namibia

Head of Department:	Dr A Samkange: BVSc (University of Zimbabwe); MSc (University of Pretoria)
Senior Lecturer:	Dr M Jago: MA, Vet M.B. (Cambridge University), MRCVS
Senior Lecturer: Senior	Dr F Bruwer: BVSc (University of Pretoria); M. Med. Vet. (University of Pretoria)
Lecturer:	Dr F Chitate: BVSc (University of Zimbabwe); MSc (University of Reading) Senior
Lecturer:	Dr P Mbiri: BVSc (University of Zimbabwe); MSc (University of Pretoria)
Lecturer:	Dr I Kaatura: Nat. Dip. Agric., BVM (University of Zambia); PGDM (Stellenbosch), MSc in Veterinary Medicine (University of Namibia)
Staff Development Fellow:	Dr I Amuthitu: BVM (University of Namibia)
Staff Development Fellow: Namibia)	Dr Vaino Kuume: BVM (University of
Adjunct Lecturer:	Dr B.E. Voigts: BVSc (University of Pretoria)
Adjunct Lecturer: Pretoria)	Dr Arnold Olivier: BVSc (University of
Adjunct Lecturer:	Dr O Aschenborn: BVSc (University of Pretoria); MSc (Sterling, Scotland)
Paraprofessional:	Mr Linus Mujiwa: Dip Anim Health (UNAM)
Paraprofessional: (UNAM)	Mr S Ndana: Dip Anim Health
Paraprofessional:	Mr P Awasman: Dip Agric (UNAM)

VETERINARY ACADEMIC HOSPITAL (MAIN CAMPUS AND NEUDAMM CAMPUS)

☎ (+264 61) 2064111 rhassel@unam.na ✉ Private bag 13301, Windhoek, Namibia

Head of Hospital:	Dr R Hassel: BVSc (University of Pretoria); PhD (Berlin)
Hospital Administrator:	Mr B Tjizu: BA Hons Industrial Psychology and Sociology (UNAM)
Associate Professor:	Prof F Stegmann: BVSc, MMed Vet (University of Pretoria)
Senior Clinician/ Head of Section:	Dr I. Baines: BVSc (University of Pretoria)
Senior Clinician/ Head of Section:	Dr V.G. Mutjavikua: BVSc (University of Pretoria) (BSc. Agric-animal science-University of Namibia)
Senior Clinician:	Dr M Beggs: BVSc (University of Pretoria)
Clinician:	Dr M Dahlberg: BVSc (University of Pretoria)
Senior Clinician:	Dr F van der Linde: BVSc (University of Pretoria)
Clinician:	Dr B Nyahoda: BVM (University of Namibia)
Clinician:	Dr A Herbert: DVM (University of Toulouse, France)
Clinician:	Dr S Gous BSc, BVSc (University of Pretoria)

Junior Clinician:	Dr F Nyathi: BVM (University of Namibia)
Junior clinician:	Dr E Nambinga: BVM (University of Namibia) Adjunct
Lecturer:	Dr D. Rodenwoldt: BVSc (University of Pretoria)
Veterinary Nurse:	Sr M Loschke: Dip. Vet. Nursing (University of Pretoria)
Theatre Assistant:	Ms J. Shiingidwa: Dip. Animal Health (University of Namibia)
Senior Veterinary Nurse:	Sr Leandra Vermeulen Dip. Vet. Nursing (University of Pretoria)

DIPLOMA IN ANIMAL HEALTH (MAIN CAMPUS AND NEUDAMM CAMPUS)

☎ (+264 61) 2064111 schitanga@unam.na ✉ Private bag 13301, Windhoek, Namibia

Academic Coordinator:	Dr S Chinyoka BVSc (University of Zimbabwe), MSc Tropical Animal Health (University of Pretoria)
Associate Professor:	Dr O Madzingira: BVSc (University of Zimbabwe); MPhil (University of Zimbabwe); MMed Vet (University of Pretoria); PhD in Veterinary Science (University of Pretoria)
Lecturer:	Dr Esther Muradzikwa Agriculture Diploma (Unam) BVSc (University of Zimbabwe)
Lecturer:	Dr Simbarashe Chinyoka BVSc (University of Zimbabwe), MSc Tropical Animal Health (University of Pretoria)
Technologist:	Evelyn Mwenda B.Sc Double Major in Biology: Environmental Biology & Physiological and Molecular Biology (University of Namibia) B.Sc honors Microbiology (University of Namibia)
Paraprofessional:	Mr. Simasiku Nicky, Diploma in Animal Health (University of Namibia),
Lecturer:	Esther Mariana Muradzikwa National Diploma in Agriculture (University of Namibia); and BVSc (University of Zimbabwe)

General enquiries regarding the School of Veterinary Medicine and the qualifications offered by the school should be directed to:

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School of Veterinary Medicine
University of Namibia
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WINDHOEK
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DEGREE: BACHELOR OF BACHELOR OF VETERINARY MEDICINE 24BVET

Purpose of the qualification

The purpose of this qualification is to provide students with a strong foundation in veterinary medicine, to encourage critical thinking, and to base their work ethic on evidence-based decision making and lifelong learning.

In order to respond to national and international imperatives such as sustainable development goals and Vision 20/30, in the context of the 4th industrial revolution, the Bachelor of Veterinary Medicine curriculum is designed to nurture interest in One Health, veterinary ethics and legislation, animal welfare and international trends in animal medicine including wildlife. Day one veterinary competencies are aligned with National and International guidelines as prescribed by the Namibian Veterinary Council and the World Organisation of Animal Health, and include competencies in non-technical skills such as communication, business literacy and emotional intelligence. The School of Veterinary Medicine veterinary graduate is prepared for entry-level practice and the provision of animal health care aligned to global standards in a variety of species. The transformed Bachelor of Veterinary Medicine curriculum allows students to acquire specific technology related skills, which are integral to the uptake and implementation of the latest technology in the work place.

GRADUATE EMPLOYABILITY ATTRIBUTES

General attributes:

- Independent lifelong learning by way of compulsory continued professional development
- Ethical and moral leadership and conduct in terms of the rules of the Veterinary Act 1 of 2013

Specific attributes:

- Systematic problem-solving approach to clinical cases and public health
- Innovative and entrepreneurial attitude to veterinary medicine and veterinary practice
- Compassion and empathy towards animals and their owners
- Constant regard for animal welfare

CAREER OPPORTUNITIES

BChD holders enjoy a wide spectrum of career opportunities nationally and internationally. As a dental practitioner:

1. The graduate may be employed in the public sector usually at the state run hospital
2. The graduate may be employed as a General Practitioner in the private sector.
3. Once registered with HPCNA, the dental practitioner has also the option of being self-employed in his/her own dental clinic.
4. May be employed at the university as academic staff

DURATION OF STUDY

The minimum duration for the Bachelor Of Bachelor Of Veterinary Medicine (BVET) is six (6) years. Candidates must complete the BVET programme within seven (8) years of full-time study.

ARTICULATION OPTIONS

This qualification may serve as an entry point to the MSc degree in Veterinary Medicine, or Animal Science, which is a related qualification, or other relevant qualifications.

CRITERIA FOR ADMISSION

The minimum admission requirements into the Bachelor of Veterinary Medicine programme are as follows:

A Namibian Senior Secondary Certificate (NSSC) at NSSCO (Ordinary Level) and NSSCAS (Advanced Subsidiary Level) with a minimum of 35 points in five subjects on the UNAM Evaluation Scale; or a recognized equivalent qualification.

In addition to the above, the following subjects and grades will be required:

English with a minimum B symbol or better at NSSC Ordinary Level, or a minimum d or better at NSSCAS Level

Biology with a minimum c symbol or better at NSSCAS Level

Mathematics with a minimum c symbol or better at NSSCAS Level

Chemistry with a minimum c symbol or better at NSSCAS Level

One additional subject, preferably Physical Science, with a minimum B symbol or better at NSSC Ordinary Level or a minimum d symbol or better at NSSCAS Level

OR

A Namibian Senior Secondary Certificate (NSSC), obtained prior to 2021, at NSSC-O (Ordinary Level) and NSSC-H (Higher Level) with a minimum of 35 points in five subjects on the UNAM Evaluation Scale; or a recognized equivalent qualification.

In addition to the above, the following subjects and grades will be required:

English with a minimum B symbol or better at NSSC Ordinary Level, or a score of 3 or better at NSSC Higher level

Biology (or Life Science) with a minimum B symbol or better at NSSC Ordinary Level, or a score of 3 or better at NSSC Higher Level

Mathematics with a minimum B symbol or better at NSSC Ordinary Level, or score of 3 or better on NSSC Higher level

Physical Science or Chemistry with a minimum B symbol or better at NSSC Ordinary Level, or a score of 3 or better at NSSC Higher Level

Alternatively, candidates who have successfully passed mathematics, biology and chemistry at school level and completed an entire year (first, second, third or fourth) or degree of a science based curriculum relevant to Veterinary Medicine (e.g. Animal Science, Wildlife Management, Biochemistry, Microbiology), may be admitted into the first year of the Bachelor of Veterinary Medicine programme if they have passed all modules of that year with an average of 65% and no module less than 60% in that year; in the case of a completed degree an average of 60% in the final year and no module less than 60%.

Candidates with a three-year Diploma in Animal Health or related field, with a combined average pass of 70% or higher, with no module less than 65%, from a recognized and accredited institution, may be granted admission to the Bachelor of Veterinary Medicine degree programme at the discretion of the School.

Candidates may be admitted to the Bachelor of Veterinary Medicine degree based on Recognition of Prior Learning (RPL), based on procedures in the UNAM RPL Policy.

In addition to the above, final admission for all candidates will depend on a successful interview and pre-selection test.

Veterinary graduates from a faculty which does not hold accreditation with the Namibia Veterinary Council wishing to join the UNAM Bachelor of Veterinary Medicine programme, will be required to write an entrance examination if more than 5 years have lapsed since the last year of registration. The entrance examination will be based on the individual candidate's application for exemption from either first, second or third year of the Bachelor of Veterinary Medicine programme. Successful candidates may be admitted upon achieving a minimum of 50% in the entrance examination, and placement will be contingent to places available and exemptions granted based on the examination. School leaving marks for mathematics, biology and chemistry will be considered during the evaluation process.

ASSESSMENT CRITERIA

The common rules and regulations of the University of Namibia including Faculty and School specific regulations governing evaluation of student performance shall apply. Students will be evaluated through both continuous assessment and / or examinations. Unless otherwise stated for an individual module, the continuous assessment mark for semester modules will constitute a weighting of 40% of the final mark whilst the examination will constitute a weighting of 60% of the final mark. In the case of year modules the continuous assessment mark will constitute a weighting of 60% of the final mark whilst the examination will constitute a weighting of 40% of the final mark. Students who have not attended 80% of lectures and / or practicals may not be granted admission into the examination.

Specific assessment criteria are indicated in the individual module descriptors.
In order to pass a module, a student must obtain a final mark of at least 50%, with a subminimum mark of 40% in each of the theory examination papers and a subminimum of 40% in each of the practical and / or oral examinations. For modules with theory and practical examinations, the final mark will be calculated on the basis of 60% theory and 40% practical, unless otherwise stated in the module descriptor. A failure (below 40%) in any practical examination constitutes a failure of the module. There are no supplementary (second opportunity) examinations for practical, oral-practical and clinical-practical examinations. All examinations with a practical paper will be written during the first opportunity examination period.
For certain modules, as indicated and outlined in the applicable study guide, the "fatal flaw" concept will apply to the practical and clinical examinations and tests of that module. Once a fatal flaw is committed, the student automatically fails that assessment with a sub-minimum mark.

MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE PROGRAMME

A student will not be re-admitted into the Bachelor of Veterinary Medicine programme if she/he has not passed / attained at least:

By the end of the first year of registration

- A pass in either V3581ES (Veterinary Structure & Function I) or V3582ES (Veterinary Structure & Function II), as well as 14 additional credits

By the end of the second year of registration

- Passed all first year modules

By the end of the third year of registration

- Passed all first year and at least 80 of year 2 credits

By the end of the fourth year of registration

- Passed all first and second year modules

By the end of the fifth year of registration

- Passed all first, second and third year modules

By the end of the sixth year of registration

- Passed all first, second, third and fourth year modules

By the end of the seventh year of registration

- Passed all first, second, third, fourth and fifth year modules

By the end of the eighth year of registration

- Passed all first, second, third, fourth, fifth and sixth year modules

All of the above is subject to a minimum of 54 credits attained per year.

ACADEMIC ADVANCEMENT AND PROGRESSION RULES

First Year to Second Year of Veterinary	To advance to the second year of the Bachelor of Veterinary Medicine programme a student must have passed all first year modules. A student who has passed both V3581ES (Veterinary Structure & Function I) and V3582ES (Veterinary Structure & Function II), will be allowed to register for a maximum of 48 second year credits (in addition to the failed modules) provided that: (i) the relevant pre-requisites have been passed and (ii) there are no time table clashes
Second Year to Third Year of Veterinary	To advance to the third year of the Bachelor of Veterinary Medicine programme a student must have passed all first and second year modules. A student who has passed all first year modules and V3681ES (Veterinary Structure & Function III) and at least an additional 30 second year credits, will be registered as a second year student. Such a student will be allowed to register for a maximum of 20 third year credits over the year (in addition to the failed modules) provided that: (i) the relevant pre-requisites have been passed and (ii) there are no time table clashes
Third Year to Fourth Year of Veterinary:	To advance to the fourth year of the Bachelor of Veterinary Medicine programme a student must have passed all first, second and third year modules. A student who has passed all first and second year modules and passed at least 98 third year credits, will be allowed to enroll for a maximum of 40 fourth year credits over the year (in addition to the failed modules), provided that: (i) the relevant pre-requisites have been passed and (ii) there are no time table clashes
Fourth Year to Fifth Year of Dentistry:	To advance to the fifth year of the Bachelor of Veterinary Medicine programme a student must have passed all first, second, third and fourth year modules. A student who has passed all first, second and third year modules and passed at least 120 fourth year credits, will be allowed to enroll for a maximum of 40 fifth year credits over the year (in addition to the failed modules), provided that: (i) the relevant pre-requisites have been passed and (ii) there are no time table clashes
Fifth Year to Sixth Year of Veterinary:	To advance to the sixth and final year of the Bachelor of Veterinary Medicine programme a student must have passed all first, second, third, fourth and fifth year modules as well as the integrated OSCE examination. A student will not be allowed to carry any modules over to the sixth year of study as this involves clinical rotations.

REQUIREMENTS FOR QUALIFICATION AWARD:

This qualification will be awarded to candidates credited with a minimum of 906 credits (students starting BVM I before 2023) OR a minimum of 1130 credits (students starting BVM I in 2023), and who have met all other relevant UNAM requirements.

number of *Modules*/Credits to be Passed/Obtained at the Various Year Levels in order to be awarded the degree by the School

Year Level	Number of Passed *Modules* Required	Credit Equivalent
First year level	13 M*odules*	120 credits
Second year level	17 *Modules*	161 credits
Third year level	16 *Modules*	175 credits
Fourth year level	17 *Modules*	225 credits
Fifth year level	17 modules	218 credits
Sixth-year-level	Clinical Rotation(21 station)	231-credits
	TOTAL	1130 **CREDITS**

First Year Level

At first year level, students take the University Core Curriculum modules and the required nine (9) Veterinary Medicine *modules* indicated below. The normal first year curriculum of a student registered in the Bachelor of Veterinary Medicine degree programme will therefore consist of thirteen (13) *Modules* (120 credits), compiled as follows:

Subject	*Modules*	Credits
University Core Curriculum	9*	20
Veterinary Medicine at first year level	4	100
Total	**13**	**120**

Curriculum

Students take all modules below:				
Semester	**Code**	**Course Title**	**Prerequisite(Co-requisites) /**	**Compulsory (C)/Elective (E)**
SC	V3520EV	Veterinary Professional Skills I	-	C
SC	V3520ET	Veterinary Terminology	-	C
SC	V3520EM	Introduction to MicroscopyA	-	C
SC	V3580ES	Introduction to Veterinary Structure and Function	-	C
SC	U3403FS	Skills Portfolio	-	C
SC	U3583AL	Academic Literacy I	-	C
SC	U3583DD	Digital literacy		C
SC	U3420SE	Sustainable Environment Awareness		C
SC	U3420CN	National and Global Citizenship		C
S1	V3581ES	Veterinary Structure & Function I	(V3520EV) & (V3520EM)	C
S2	V3582ES	Veterinary Structure and Function II	(V3520ET), (V3520EM) & (V3581ES)	C
S0	V3503EB	Veterinary Biochemistry		C

Second Year Level

At second year level, students proceed with the University Core Curriculum modules and general Veterinary Medicine modules. The normal second year level curriculum of a student registered in the Bachelor of Veterinary Medicine degree programme will therefore consist of fifteen (15) *Modules* (193 credits), compiled as follows:

Subject	*Modules*	Credits
University Core Curriculum	6*	25
Veterinary Medicine at second year level	11	136
Total	**17**	**161**

Students take all modules below:				
Semester	**Code**	**Course Title**	**Prerequisite(Co-requisites) /**	**Compulsory (C)/Elective (E)**
SC	V3610EV	Veterinary Professional Skills II	-	C
SC	V3620EF	Animal Production Farm Visits	-	C
SC	V3660EP	Pasture Science	V3581ES & V3582ES	C
SC	V3660EM	Veterinary Microbiology I	-	C
SC	U3683AL	Academic Literacy II	-	C
SC	U3420RT	Entrepreneurship	-	C
S1	V3681ES	Veterinary Structure & Function III	V3520ET, V3520EM, V3581ES & V3582ES	C
S1	V3603EP	Animal Production	(V3620EF), V3581ES & V3582ES	C
S1	V3611EM	Veterinary Microbiology II	(V3660EM)	C
S1	V3601EE	Animal Ethology	V3581ES & V3582ES	C
S1	V3621EG	Veterinary Genetics	-	C
S2	V3602AI	Veterinary Immunology & Vaccinology	(V3660EM & V3611EM)	C
S2	V3603EP	Animal Production	(V3620EF), V3581ES & V3582ES	C
S2	V3612EN	Animal Nutrition	(V3660EP), (V3681ES) V3581ES, V3582ES & V3503EB	C
S2	V3622EW	Animal Welfare	(V3681E), (V3601EE), V3581ES & V3582ES	C
S2	V3632EB	Biometry	-	C
S2	V3642EM	Molecular Biology	(V3621EG)	C

Third Year Level

At third year level, students proceed with the general Veterinary Medicine modules. The normal third year level curriculum of a student registered in the Bachelor of Veterinary Medicine degree programme will therefore consist of sixteen (16) *Modules* (175 credits), compiled as follows:

Subject	*Modules*	Credits
Veterinary Medicine at third year level	16	175
Total	**16**	**175**

Students take all modules below:				
Semester	**Code**	**Course Title**	**Prerequisite(Co-requisites) /**	**Compulsory (C)/Elective (E)**
S1	V3711AI	Infectious Diseases I	V3660EM & V3611EM	C
S1	V3731AP	Veterinary Parasitology I	V3681ES, V3682ES & V3503EB	C
S1	V3701CS	Veterinary General Surgery	V3681ES & V3682ES	C
S1	V3721CD	Veterinary Diagnostic Imaging	(V3722CC), V3681ES & V3682ES	C

S1	V3721PF	Fish and Bee Medicine	V3660EM & V3611EM	C
S1	V3721EV	Veterinary Professional Skills III	-	C
S2	V3732AP	Veterinary Parasitology II	(V3731AP), V3681ES V3682ES & V3503EB	C
S2	V3712AI	Infectious Diseases II	(V3711AI), 3660EM & V3611EM	C
S2	V3722CC	Clinical diagnostics	V3681ES, V3682ES V3503EB, V3601EE, V3622EW & V3602AI	C
S2	V3702CA	Veterinary Anaesthesiology	(V3703AD), V3681ES & V3682ES	C
S0	V3703AD	Veterinary Pharmacology	(V3722CC) ,V3503EB, V3681ES & V3682ES	C
S0	V3723AG	General Pathology	V3681ES, V3682ES & V3602AI	C
S0	V3763AT	Toxicology & Ethno-Vet Medicine	V3503EB,V3681ES & V3682ES	C

Fourth Year Level

At fourth year level, students proceed with the general Veterinary Medicine modules. The normal fourth year level curriculum of a student registered in the Bachelor of Veterinary Medicine degree programme will therefore consist of seventeen (17) *Modules* (225 credits), compiled as follows:

Subject	***Modules***	**Credits**
Veterinary Medicine at fourth year level	17	225
Total	**17**	**225**

Students take all modules below:				
Semester	**Code**	**Course Title**	**Prerequisite(Co-requisites) /**	**Compulsory (C)/Elective (E)**
S1	V3803AS	Systemic Pathology	V3723AG	C
S1	V3811AV	Veterinary Public Health I	V3731AP, V3732AP V3711AI, V3712AI & V3723AG	C
S1	V3813CC	Companion Animal Clinical Studies I	(V3821CC), V3731AP V3732AP, V3703AD, V3763AT, V3711AI, V3712AI, V3701CS V3721CD & V3722CC,	C
S1	V3831PA	Production Animal Clinical Studies I	(V3821CC), V3763AT, V3711AI, V3712AI V3722CC, V3703AD, V3723AG, V3701CS V3731AP & V3732AP	C
S1	V3823PR	Theriogenology I	V3711AI, V3712AI, V3722CC, V3703AD, V3723AG & V3701CS	C
S1	V3863PC	Wildlife Clinical Studies I	V3711AI, V3712AI V3722CC, V3703AD V3723AG, V3701CS, V3731AP & V3732AP	C
S1	V3821CC	Clinical Pathology	V3722CC, V3731AP & V3732AP	C
S1	V3843AE	Veterinary Epidemiology	V3632EB, V3711AI & V3712AI	C
S2	V3812AV	Veterinary Public Health II	(V3811AV), V3731AP, V3732AP, V3711AI, V3712AI & V3723AG	C
S2	V3803AS	Systemic Pathology	V3723AG	C
S2	V3822EV	Veterinary Professional Skills IV	-	

S2	V3843AE	Veterinary Epidemiology	V3632EB, V3711AI & V3712AI	
S2	V3822AL	Field Practical Training: Laboratory	V3660EM, V3611EM, V3731AP, V3732AP, V3763AT, V3723AG & V3642EM	
S2	V3823PR	Theriogenology I	V3711AI, V3712AI, V3722CC, V3703AD, V3723AG & V3701CS	
S2	V3832PA	Production Animal Clinical Studies II	(V3831PA),(V3821CC) V3763AT V3711AI, V3712AI V3722CC V3703AD V3723AG V3701CS	
S2	V3863PC	Wildlife Clinical Studies I	V3711AI, V3712AI, V3722CC, V3703AD, V3723AG, V3701CS, V3731AP, V3732AP,	
S2	V3813CC	Companion Animal Clinical Studies I	(V3821CC), V3731AP, V3732AP, V3703AD, V3763AT, V3711AI, V3712AI, V3701CS, V3721CD & V3722CC	

Fifth Year Level

At fifth year level, students proceed with the general Veterinary Medicine modules. The normal fifth year level curriculum of a student registered in the Bachelor of Veterinary Medicine degree programme will therefore consist of seventeen (17) *Modules* (218 credits), compiled as follows:

Subject	***Modules***	**Credits**
Veterinary Medicine at fifth year level	17	218
Total	**17**	**218**

Students take all modules below:				
Semester	**Code**	**Course Title**	**Prerequisite(Co-requisites) /**	**Compulsory (C)/Elective (E)**
S1	V3821AR	Research Methodology	V3843AE	C
S1	V3833CC	Companion Animal Clinical Studies II	V3813CC	C
S1	V3843PR	Theriogenology II	V3823PR	C
S1	V3851PA	Production Animal Clinical Studies III	(V3823PH),V3831PA & V3832PA	C
S1	V3801PC	Wildlife Clinical Studies II	V3830PW	C
S2	V3843EV	Veterinary professional skills V	-	C
S2	V3843PR	Theriogenology II	V3823PR	C
S2	V3872PA	Production Animal Clinical Studies IV	(V3851PA), (V3823PH), V3831PA & V3832PA	C
S2	V3833CC	Companion Animal Clinical Studies II	V3813CC	C
S2	V3842AJ	Veterinary Legislation	(V3833CC),(V3801PC), (V3851PA), (V3872PA) & (V3843PR)	C
S2	V3882FO	Integrated OSCE Examination	(V3833CC), (V3851PA)(, (V3872PA), (V3843PR),(V3801PC), (V3823CH), V3813CC V3831PA,, V3832PA	C

			V3823PR, V3821CC, V3722CC , V3701CS & V3863PC	
S0	V3883AR	Research Project	(V3821AR) & V3843AE	C
S0	V3823CH	Equine Clinical Studies	V3731AP, V3732AP & V3703 AD, V3763AT, V3701CS, V3721CD,V3722CC & V3803AS	C
S0	V3823PH	Herd Health Management & Economics	(V3851PA), (V3872PA), (V3843PR), V3831PA, V3832PA V3823PR & V3843AE,	C

Sixth Year Level

S0	V3883FY	CLINICAL ROTATION	BVM V including integrated OSCE examination	C

COURSE DESCRIPTORS

FIRST YEAR LEVEL

V3520EV VETERINARY PROFESSIONAL SKIILS I

Proposed NQF Level: 5 **Credits:** 2 **Contact Hours:** Lectures: 1 x 1hr lecture / week for 6 weeks
Content: Budgeting: money management
Work-life balance: managing your personal affairs; saying no
Organisational skills: coping with high work volumes
Presentation skills
Conflict management strategies
Dealing with difficult people / students / lecturers
Time management
Personal boundary management
Healthy habits: meal management
Asking for help
Critical thinking and problem-solving
Attention to detail: check your work before submission
Effective stress management and resilience

Assessment: Continuous Assessment: 1 assignment for final CA mark (e.g. written assignment, group assignment, role-play and / or presentation).
Continuous participation assessment during compulsory lecture attendance

V3520ET VETERINARY TERMINOLOGY

Proposed NQF Level: 5 **Credits:** 2 **Contact Hours:** Lectures: 2 x 1hr lectures / week for 6 weeks
Content: How medical terms are formed
Terms related to body systems, pathology and procedures
Directional terms
Body planes
Positional terms
Assessment: Continuous assessment: Minimum 2 assignments and 1 theory test for final CA mark.

V3520EM INTRODUCTION TO MICROSCOPY

Proposed NQF Level: 5 **Credits:** 2 **Contact Hours:** Lectures and Practical: Integrated 1 x 3hr practical / week for 6 weeks
Content: Principles of microscopy: various microscopes; microscopy techniques and practical use of microscopes

Tissue collection and tissue processing for histology.
Assessment: Continuous assessment: Minimum 3 practical assessments and 1 theory assessment for final CA mark.

V3580ES INTRODUCTION TO VETERINARY STRUCTURE AND FUNCTION

Proposed NQF Level: 5 **Credits:** 8 **Contact Hours:** Lectures and 6 x 1hr lectures / week for 6 weeks
Practical: 2.5 x 3hr practical / week for 6 weeks

Content: Gross anatomy:
Definition of anatomy and its relationship to function (physiology) and general anatomy introduction.
General and applied osteology, arthrology and syndesmology.
Bones of the head, neck, trunk, fore and hindlimbs
Physiology
Definition and etymology of physiology (functions).
General introduction - organ systems: Cell physiology; ionic composition of cellular fluid; cell membrane functions; cytoplasm; nucleoplasm
Overview and integration: concept of feedback loop; homeostasis; body system integration.
Bone, joints and synovial fluid: bone formation; bone growth; bone remodeling

Developmental anatomy
Definition and introduction to terms.
Early embryonic development: gametogenesis in the male and female; summary processes from gametogenesis to fertilization (capacitation, acrosome reaction, cortical reaction); cleavage; morulation; gastrulation; placentation in domestic animals; body folding; branchial arch formation, neurulation, body cavity formation.

Assessment: Continuous assessment: Minimum 3 theory assessments and 1 practical assessment for final CA mark.

U3403FS SKILLS PORTFOLIO

Proposed NQF Level: None **Credits:** NCB **Contact Hours:** N/A
Content: Academic Planning and Goal Setting , Attitude and Motivation, Learning Styles, Study Methods and Skills, Time Management, Assessment Preparation, Mental well-being, Interpersonal Communication, Financial matters and management Student Violence, Career Planning and Development
Assessment: 100% continuous assessment
Reflective journal on each unit (portfolio)

U2583AL ACADEMIC LITERACY I

Proposed NQF Level: 5 **Credits:** 8 **Contact Hours:** Core Semester: 4 hours /week;
Semester 1: 2 hours/week
Semester 2: 2 hours/week

Content: The module will cover study skills, reading (including extensive reading), listening, speaking, writing, referencing, and language usage and text organisation.

Assessment: Assessment will be based on Continuous Assessment

U3583DD DIGITAL LITERACY

Proposed NQF Level: 5 **Credits:** 8 **Contact Hours:** Semester 0: 4 hours /week;
Semester 1: 2 hours/week
Semester 2: 2 hours/week

Content: Digital Proficiency: ICT-based devices (laptops, tablets, smartphones, desktop computers, digital instruments and equipment); a mouse, keyboard, touch screen, voice control and other forms of input; screens, audio headsets and other forms of output; digital capture devices; University digital learning systems and a range of personal digital services such as social media, cloud storage services, sharing sites.
Digital Productivity: Basic productivity software (text editing, presentation, spreadsheets, image editing); email and other digital communication services; Internet or cloud or institutional shared spaces for Organising, managing and backing up digital files; software/apps and services suitable for learning-related tasks; digital tools fit learning and managing learning time.
Information Literacy: search engines, indexes or tag clouds; wikis, blog posts, scholarly journals, e-books and the open web; file spaces and folders, bookmarks, reference management software and tagging; copyright, and digital citizenship issues.
Data and Media Literacy: Digital data using spreadsheets and other media; data security and privacy; digital media messages – text, graphics, video, animation, audio and multimedia.
Digital Creation and Innovation: digital materials (video, audio, stories, presentations, infographics); new digital tools for learning in digital settings.
Digital Communication, Collaboration and Participation: digital communication; differences between media, norms of communicating in different spaces; false or damaging digital communications; collaborative tools and online environments; online networks.

Digital Learning and Development: digital learning opportunities; digital learning resources; digital tools/materials for organising, planning and reflecting on learning (mind-mapping, note-taking, e-portfolio/ learning journal/ blog)
Digital Identity and Wellbeing: online profiles for different networks (personal, professional, academic); digital reputation; managing personal data and privacy; digital CV or portfolio of work; digital technologies for personal development; online etiquette; wellbeing and safety online; internet addiction; cyberbullying and other damaging online behaviour.

Assessment: Continuous assessment: Collaborative assessment tasks
Digital productivity: cloud based collaborative digital media creation using cloud platforms
Project: Digital communication, collaboration and participation/ Digital Wellbeing

Individual assessment tasks

2.1 Assignment: information literacy assignment
2.2 Test x 2

Practical
Digital proficiency
Data and Media literacy
No written examination

U3420CN NATIONAL AND GLOBAL CITIZENSHIP

Proposed NQF Level: 4 **Credits:**2 **Contact Hours:** Up to 1 contact lecture periods per week for 6 Weeks
Content: UNIT 1: Constitution and its Importance: What is a constitution; Functions of a constitution; What it contains; Constitution and democracy?
UNIT 2: Global Citizenship: The meaning of global citizenship; Importance of global awareness; World issues of concern to global citizens.
UNIT 3: Civic Engagement: What do we mean by civic engagement; Dimensions of civic engagement; Indicators of civic engagement; Promoting civic engagement.

UNIT 4: Globalization: Understanding globalization; Cultural construction of neoliberal globalization; Major players; Major domains; Major Issues; Futures of Globalization
UNIT 5: Intercultural Communication: Dealing with difference; Levels of culture; Stereotypes and generalizations; Intercultural communication Processes
UNIT 6: Sustainable Development Goals and individual action: Introduction to SDGs; Contributing to achievement of SDGs through action

Assessment: Continuous assessment of 100% - Assessment will be done by completing online pop-up quizzes; and developing their online portfolios of personal action as response to tasks assigned in class.

V3581ES VETERINARY STRUCTURE & FUNCTION I

Proposed NQF Level: 5 **Credits:**32 **Contact Hours:** Lectures: 14x 1hr lectures / week for 13 weeks
Practical: 3x 3hr practical / week for 13 weeks
23hrs integrated lectures, practicals and tutorials / week for 13 weeks

Content: Gross anatomy:
Muscles of the head, neck, trunk, fore and hindlimbs.
Nervous system: general introduction to the nervous system; autonomic nervous system; central and peripheral nervous systems.
Central nervous system:
telencephalon and diencephalon; brainstem (mesencephalon, pons, medulla); cerebellum. Cranial nerves: names, courses and distribution of cranial nerves and specific dysfunction related to lesions in cranial nerves. Spinal cord: Peripheral nervous system spinal nerves. The brachial and lumbosacral plexuses: names, courses and distribution of named nerves of the brachial plexus. Names, courses and distribution of lumbosacral plexus nerves.

Physiology:
Nervous system: central and peripheral nervous systems; the autonomic nervous system; somatic nervous system; cerebro-spinal fluid; neurophysiology.
Muscle: muscles; types of muscles; sliding filament theory of muscle contraction; excitation-contraction coupling; locomotion; movement coordination.

Developmental anatomy:
Development of the:
Trunk and limbs

Neuromuscular system; including central and peripheral nervous systems

Histology:
Definition and etymology of microscopic anatomy.
Basic tissues: epithelial tissue; connective tissue; nervous tissue; muscle tissue.
Cerebrum, cerebellum, peripheral ganglia nerve trunk and peripheral nerve.

Assessment: Continuous assessment: Minimum 4 theory assessments (one in each section) and at least 3 marked practical assessments (one in each: Anatomy, Histology and Physiology).
CA calculation: Anatomy 50%; Physiology 20%; Histology 20%; Developmental Anatomy 10%

Examination:
Paper 1: 1 x 3hr Physiology integrated theory paper (50%)
Paper 2: 1 x 3hr Anatomy theory paper (25%)
Paper 3: 1 x 2hr Anatomy practical examination (25%)

V3503EB VETERINARY BIOCHEMISTRY

Proposed NQF Level: 5 **Credits:**14 **Contact Hours:** Lectures: 2x 1hr lectures / week for 13 weeks per semester
Practicals: 1 x 3hr practical / alternate week for 13 weeks per semester

Content: Introduction to Biochemistry: Properties of water; the concepts of hydrogen bonding; colligative properties of solutions; ionization; ion product; pH; acids and bases; titration and buffers
Structures and properties of the major classes of biomolecules and their biological functions:
Protein structure and function: Basic building block of proteins, their chemistry and reactions; Oxygen Transporting Proteins: Myoglobin; Hemoglobin; Relationship between Structure and Function
Enzymes: Kinetics; Mechanisms and Regulation; Different classes of carbohydrates; Lipid classification: compounds which are non-polymeric; cell membranes and its properties; fatty acids, triglycerides, phospholipids and steroids; Nucleic acids: Chemistry of purines and pyrimidines; nucleosides and nucleotides; nucleic acids namely DNA, RNA, their structure, topology and function
Metabolism and the laws of thermodynamics: Energy Balance and Energy Utilization; Carbohydrate Metabolism: Glycolysis; Citric Acid Cycle; Oxidative Phosphorylation; Pentose Phosphate Pathway; Cori Cycle; Gluconeogenesis and Glycogen Metabolism; Fatty Acid Metabolism; degradation and synthesis; Urea cycle

Assessment: Continuous assessment: Minimum 6 theory assessments and at least 5 practical assessments
CA calculation: 70% theory and 30% practical

Examination: 1x 3hr theory paper

V3582ES VETERINARY STRUCTURE & FUNTION II

Proposed NQF Level: 5 **Credits:** 40 **Contact Hours:** Lectures: 14x 1hr lectures / week for 13 weeks

Practical: 3x 3hr practical / week for 13 weeks

23hrs integrated lectures, practicals and tutorials / week for 13 weeks

Content: Gross anatomy:
Cardiopulmonary system: External nares; nasal cavities; paranasal sinuses; nasopharynx; guttural pouches; larynx, trachea. Thorax: muscles of respiration; cranial mediastinum (oesophagus, trachea, cranial mediastinal lymph nodes, vagosympathetic trunk, recurrent laryngeal nerve); middle mediastinum; pleura and lungs; (the heart, blood supply and great vessels of the thorax); caudal mediastinum; blood supply to the neck, head, forelimb. Thoracic wall and organs; blood supply to abdominal and pelvic organs.
Digestive system: Mouth; oral vestibule; oral cavity proper; teeth (general structure and ageing); tongue; pharynx (general and comparison of horse and cattle); salivary glands; muscles of mastication; deglutition. Esophagus (e.g. potato and fruit potential for chocking in cattle and horses, and persistent right aortic arch in dogs). Stomach. Abdominal wall and abdominal topography. Liver; pancreas.
Urinary system: General gross and topographic anatomy of the kidney; ureters; urinary bladder and urethra.

Physiology:
Cardiovascular system: overview of cardiovascular function; blood: composition, properties and function of blood, blood circulation, physiology of lymph, cardiac muscle, mechanism of cardiac contraction, heart beat and cardiac cycle, regulation of blood pressure and heart activity.
Respiratory system: organizational structure and functions, review of gas Law, breathing mechanisms, ventilation, gases exchange in the lung and in the tissue, respiratory volumes and capacities, respiratory sounds, control of respiration. Physiology of olfaction.

Digestive system: review of gastrointestinal tract (GIT), main functions of digestive system, physiology of taste, accessory digestive organs and glands, digestive phenomenon of monogastric and polygastric animals; regulation of the gastrointestinal tract functions.
Excretory system: organisational structure and functions of the kidney, urine formation, glomerular filtration rate, secretion and excretion of metabolites, control of water and electrolytes. Regulation of acid base balance and arterial blood pressure regulation.

Developmental Anatomy:
Development of the:
Digestive system: emphasis of the simple and ruminant stomach; the ascending colon in the dog, ruminant and horse; salivary glands; liver; pancreas
Respiratory system
Cardiovascular system: heart and blood vessels
Urinary system

Histology:
Cardiovascular: cardiac muscle; large, medium and small arteries; veins; venules; capillaries
Respiratory portion of the respiratory system: respiratory mucosa, olfactory mucosa, the muco-ciliiary clearance complex, the alveoli, the blood-air barrier.
Digestive system: mouth; the tongue; oral papillae; taste buds; dental pad; teeth; salivary glands; esophagus; simple stomach; rumen; reticulum; omasum; abomasum; liver; pancreas; duodenum; jejunum; ileum; caecum; colon and anal canal
Urinary system: kidney; ureters; urinary bladder and urethra

Assessment: Continuous assessment: Minimum 4 theory assessments (one in each section) and at least 3 practical assessments (one in each: Anatomy, Histology and Physiology).
CA calculation: Anatomy 40%; Physiology 30%; Histology 20%; Developmental Anatomy 10%

Examination:
Paper 1: 1 x 3hr Physiology integrated theory paper (50%)
Paper 2: 1 x 3hr Anatomy theory paper (25%)
Paper 3: 1 x 2hr Anatomy practical examination (25%)

SECOND YEAR LEVEL

V3610EV VETERINARY PROFESSIONAL SKILLS II

Proposed NQF Level: 6 **Credits:**1 **Contact Hours:** Lectures: 1 x 1hr lecture / week for 6 weeks
Content: Study methods: study plan
Concentration and focus
Conceptual thinking: flexibility; mental agility; change management
Stress: performance; happiness; stress management plan; including self-care in relation to compassion; burnout
Resilience: personal grit
Mind strategies (your mind is your strongest muscle)
Mindfulness: mindfulness practices; minimalism
Wheel of Life, Wheel of work: personal growth and purpose.
One Health: Global sustainability challenges and individual contribution
Assessment: Continuous assessment: 1 assignment for final CA mark (e.g. written assignment, group assignment, role-play and / or presentation).
Continuous participation assessment during compulsory lecture attendance

V3620EF ANIMAL PRODUCTION FARM VISITS

Proposed NQF Level: 6 **Credits:** 2 **Contact Hours:** Lectures and Practical: Integrated 7 hours per week for 6 weeks (6 full days – 1 day per week)
Content: Animal production practices in different sectors: commercial, communal and semi intensive in cattle, sheep, goats, poultry and pigs.

Assessment: Continuous assessment: a minimum of 3 field reports.
These field reports will be used as reference material in the Animal Production module

V3660EP PASTURE SCIENCE

Proposed NQF Level: 6 **Credits:** 6 **Contact Hours:** Lectures: 4 x 1hr lecture / week for 6 weeks
Practicals: 1 x 3hr practical / week for 4 weeks

Content: Forage and hay quality
Utilization of rangelands by herbivores

Management options: concept of rotational grazing; application of appropriate measures towards preservation of nutritive value of pastures, hay and forages
Palatable and non-palatable pastures adapted to the Namibian climatic conditions
Establishment of perennial and annual pastures: natural and planted pastures; utilization and management
Assessment: Continuous assessment: Minimum 2 theory assessments (1hr - 50marks) and at least 3 marked practical assessments. Students' contribution for example in practicals and oral quizzes.

V3660EM VETERINARY MICROBIOLOGY I

Proposed NQF Level: 6 **Credits:** 6 **Contact Hours:** Lectures: 4x 1hr lectures / week for 6 weeks
Practical: 1 x 3hrs practical / alternate week for 6 weeks

Content: General microbiology: Introduction and history of microbiology; morphology, structure, growth and nutrition of bacteria, virus and fungi; systematics; taxonomy including classification and nomenclature of bacteria; microbial ecology.
Diagnostic microbiology: Equipment, preparation of culture media
Mycology: Introduction, taxonomy, classification of fungi, morphology, growth
Virology: Introduction to viruses, systematics, taxonomy and classification of viruses

Assessment: Continuous assessment: Minimum 2 theory assessments (1hr - 60marks – each test count 30%) and at least 3 marked practical assessments (each assignment count 10%).

U3683AL ACADEMIC LITERACY II

Proposed NQF Level: 6 **Credits:**8 **Contact Hours:** Semester 0: 4 hours/week
Semester 2: 2 hours/week

Content: The module is designed for students enrolled in a bachelor's degree, which requires them to do basic research, read and listen to specific academic material, produce specific written texts and give academic presentations. The module thus, focuses on enhancing academic reading, academic vocabulary, writing, listening and speaking.
Assessment: Assessment will include written tests, individual and group assignments, portfolio assessments and oral presentations.

U3420RT ENTREPRENEURIAL SKIILS

Proposed NQF Level: 4 **Credits:** 2 **Contact Hours:** 1 x 2h per week for 6 weeks
Content: **Definition and scope of entrepreneurship and entrepreneur**; Entrepreneur's environment; Characteristics of entrepreneurs; Basic concepts of entrepreneurship; Forms of entrepreneurship;
The role of entrepreneurship; The entrepreneurial process;
The entrepreneurial mindset; Decision-making skills; Creativity, innovation and entrepreneurship; Critical thinking skills; Problem solving skills; Business and personal goal-setting skills; Negotiation skills, Communication skills, Assertiveness skills, Interpersonal skills, Cognitive skills;

Transferable skills, Practical application of entrepreneurial skills; Starting a new business; Managing a business start-up; Growing an entrepreneurial venture; Marketing skills; Managing people; Record keeping; networking skills; Time management skills; Change management skills; Entrepreneurship success stories in the global context.
Assessment: The module will be assessed using 100% continuous assessment.

V3681ES VETERINARY STRUCTURE & FUNCTION III

Proposed NQF Level: 6 **Credits:** 35 **Contact Hours**: Lectures: 6x 1hr lectures / week for 13 weeks
Practical: 2x 3hr practicals / week for 13 weeks
12hrs integrated lectures and practicals per week

Content: Gross anatomy:
Male reproductive system: gross and topographic anatomy of the testis; ductus deferens; accessory sex glands (ampulla of ductus deferens, vesicular glands, prostate glands and bulbourethral glands); penis and prepuce.
Female reproductive system: ovaries, uterine tube, uterus, vagina vestibule, vulva and mammary glands.
Integumentary / thermoregulatory system: skin; epidermal structures; horn; hooves; nails; skin glands.
Endocrine system: adenohypophysis; adrenal gland
Lympho-reticular system: spleen; lymphatic vessels; lymph node; thymus.
Special senses: eye; inner ear.
Physiology:
Reproductive system: genital glands; oestrus cycle; mammary gland
Integumentary / thermoregulatory system: temperature regulation in health and disease situations; functions of the skin: endothermic, poikilothermic and homoeothermic animals; body temperature regulation; animal physiological response to cold and hot environment; animal adaptation to hot climate; water and mineral balance.
Endocrine system: endocrine glands; functions of the endocrine system; systemic effects of main hormones; the renin-angiotensin-system; endocrine versus nervous system regulation.
Special senses: sight; hearing; balance; pain

Developmental Anatomy:
Development of the:
Reproductive system: male; female
Integumentary system: including nails; hooves; horns.
Endocrine glands: adenohypohysis; thyroid gland; adrenal glands.
Lympho-reticular system
Special senses: eye; ear

Histology:
Reproductive system: Male – testis; ductus deferens; accessory sex glands (ampulla of ductus deferens; vesicular glands; prostate glands; bulbourethral glands); penis. Female – ovaries; uterine tube; uterus; vagina vestibule; vulva; mammary glands.
Lympho-reticular system: spleen; lymphatic vessels; lymph nodes; thymus.
Assessment: Continuous Assessment: Minimum 4 theory assessments (one in each section) and at least 3 practical assessments (one in each: Anatomy, Histology and Physiology).
CA calculation: Anatomy 40%; Physiology 30%; Histology 20%; Developmental Anatomy 10%
Examination:
Paper 1: 1 x 3hr Physiology integrated theory paper (50%)
Paper 2: 1 x 3hr Anatomy theory paper (25%)
Paper 3: 1 x 2hr Anatomy practical examination (25%)

V3603EP ANIMAL PRODUCTION

Proposed NQF Level: 6 **Credits:** 16 **Contact Hours:** Lectures: 2x 1hr lectures / week for 13 weeks per semester
Practical: 1x 3hrs practical / 4th week for 13 weeks per semester

Content: Distribution of livestock in Namibia
Livestock breed characteristics (cattle, pigs, goats, sheep and poultry) farmed in Namibia
Importance of livestock for the Namibian economy
Livestock production systems applied in Namibia
Important husbandry/management practices and principles for major livestock species (beef cattle, dairy cattle, sheep, goats, poultry and pigs)
Livestock and livestock by-products, markets, marketing channels
Identification and traceability (NamLITS), and transportation
Namibia's livestock trade and trading partners
Opportunities and challenges in the livestock industry particularly in Namibia
Assessment: Continuous Assessment: minimum 6 theory assessments and 3 practical assessments
Examination: 1 x 3hr theory paper

V3611EM VETERINARY MICROBIOLOGY II

Proposed NQF Level: 6 **Credits:**15 **Contact Hours:** Lectures: 4x 1hr lectures / week for 13 weeks
Practical: 1x 3hr practical / alternate week for 13 weeks

Content: General microbiology and bacteriology: control of microorganisms; pathogenicity; virulence and infection; endotoxins and exotoxins; bacterial genetics; plasmids and antibiotic resistance.
Diagnostic microbiology: Equipment; sterilization; disinfection and asepsis; staining; bacterial motility; biochemical test; aerobic and anaerobic cultivation; isolation of bacteria in pure culture; morphological and cultural characteristics; biochemical characteristics; antibiogram and slide culture technique for fungus
Mycology: growth, nutrition and reproduction in fungi.
Virology: general properties; strategy of replication and the viral transmission mechanisms in each viral family; cultivation and purification of viruses; cell-virus interactions; viral genetics and interferon; prions and prion diseases and their implication on veterinary public health**.**

Assessment: Continuous Assessment: Minimum 2 theory assessments (1hr - 60marks – each test count 30%) and at least 3 marked practical assessments (each assignment count 10%).

Examination: 1x 3hr theory paper

V3601EE ANIMAL ETHOLOGY

Proposed NQF Level: 6 **Credits:** 8 **Contact Hours:** Lectures: 2x 1hr lectures / week for 13 weeks
Practical: 1x 3hr practical / alternate week for 13 weeks

Content: :**Behavioural adaptations of domestic animals** to their environment
Appropriate animal restraining and handling practices
History of the study of animal ethology
Interpretation of animal behaviour
Major types of behaviour in domestic animals

Selected animal breeds
Assessment: Continuous Assessment: minimum 6 assessments (Theory and Practical assessments)

Examination: 1 x 2hr paper

V3621EG VETERINARY GENETICS

Proposed NQF Level: 6 **Credits:** 8 **Contact Hours:** Lectures: 2x 1hr lectures /week for 13 weeks
Practical: 1 x 3hr practical / 4th week for 13 weeks

Content: Aspects of genetics relevant to animal diseases and production
Mendelian genetics
Modes of gene action: dominance; additive; epistasis
Single gene disorders
Chromosomal mutations
Gene mutations
Applied population genetics
Quantitative variation
Inbreeding
Crossbreeding
Types of commercial breeding programmes in beef cattle
Introduction to immunogenetics
The MHC
Genetics of disease resistance
Biotechnology in animal production and disease diagnosis: AI; MOET; IVM; IVF; control of sex ratio; PCR-based disease diagnostics
Special topics: case studies of breeding for disease resistance

Assessment: Continuous Assessment (CA): Minimum 2 theory assessments and at least 3 marked practical assessments

Examination: 1 x 2hr theory paper

V3602AI VETERINARY IMMUNOLOGY & VACCINOLOGY

Proposed NQF Level: 6 **Credits:** 8 **Contact Hours:** Lectures: 2x 1hr lectures / week for 13 weeks
Practical: 1x 3hr practical / alternate week for 13 weeks

Content: History and definition of concepts, types of immunity , tissues, organs and cells of the immune system, antigens and immunogenicity, antibodies and their interactions Immune dysfunction: autoimmunity and autoimmune diseases; immune response to bacterial, fungal, viral and parasitic infections; relationship between immunology and vaccinology; the general principles of immunization and vaccines; types of vaccines; composition and development; factors affecting vaccine efficacy; vaccine preventable diseases; vaccination policy; immunization schedules with reference to Namibia.
Introduction to blood collection and serum processing, applications of immunology: immuno-serological reactions; vaccination and other immunization techniques; serological diagnosis of common animal diseases encountered in Namibia; vaccine testing.
Assessment: Continuous assessment: minimum two written tests (50 marks each), two quizzes (25 marks each) and five marked practicals/tutorials/assignments (50 marks total, i.e. 10 marks each).

Examination: 1x 2hr theory paper

V3612EN ANIMAL NUTRITION

Proposed NQF Level: 6 **Credits:** 15 **Contact Hours:** Lectures: 4x 1hr lectures / week for 13 weeks
Practical: 1x 3hr practical / alternate week for 13 weeks

Content: Animal nutrition including key concepts and terminologies
The role of animal nutrition in animal production.
Animal nutrition of various production and companion animals.
Classification of animal feeds; general comparison of plants and other sources of nutrients; plants as feed sources with special focus on nutritive values, availability, affordability; feed fractions and their nutritional implications; contaminants and toxins in animal feeds; feed additives; laboratory feeds analysis methods; proximate and detergent systems; feed energy and protein partitioning using the Metabolisable System (ME & MP); digestibility and degradability estimation methods – in vitro, in vivo, in sacco techniques; feed intake and factors influencing intake in animals; feed formulation based on animal nutritional requirements; use of feed value estimates; mineral and vitamin nutrition
Assessment: Continuous assessment: Minimum 2 theory assessments (1hr - 60marks – each test count 30%) and at least 3 marked practical assessments (each assignment and practical count 10%). Student's contribution 10% (for example in oral quizzes)

Examination: 1 x 3hr theory paper- 150 marks

V3622EW ANIMAL WELFARE

Proposed NQF Level: 6 **Credits:**8 **Contact Hours:** Lectures: 2x 1hr lectures / week for 13 weeks
Practical: 1x 3hr practical / alternate week for 13 weeks

Content: **Aspects of animal welfare science**: Five Freedoms; OIE animal welfare recommendations.
Behavioural and animal husbandry issues affecting welfare: housing, handling, basic aspects of nutrition.
Introduction to animal welfare ethics.
Influence of transport and the marketplace on animal welfare
Ethics and principles of euthanasia.
Current relevant Namibian animal protection and welfare legislation: role of the welfare organisations.
Role of veterinarians in enhancement of animal welfare.

Assessment: Continuous assessment: minimum 6 assessments (Theory and Practical assessments)
Examination: 1 x 2hr paper

V3632EB BIOMETRY

Proposed NQF Level: 6 **Credits:**15 **Contact Hours:** Lectures: 4x 1hr lectures / week for 13 weeks
Tutorial: 1x 3hr tutorial / alternate week for 13 weeks

Content: **Introduction to Biometry:** types of data; random sampling; hypothesis testing; central tendency and variance; single samples; power analysis and data transformation; probability; inferences for one sample; summarizing and describing data; the two sample problem; contingency tables; introduction to non-parametric methods; the analysis of count data; Regression and correlation analysis, analysis of variance (ANOVA)
Statistics: descriptive; inferential; variables; qualitative versus quantitative. Data types: primary versus secondary; categorical versus discrete; continuous. Sources of data: population versus sample; types of measurements: nominal; ordinal; interval, ratio scales
Presentation of data: tabular forms and graphical methods: histograms; pie charts; bar charts; frequency polygons; ogives; stem-and-leaf plots; box –and-whiskers plots. Measures of central tendency: Z notation; mean; median; mode; quartiles; percentiles. Measures of dispersion: variance; standard deviation; range; inter-quartile range; skewness and kurtosis. Identification of outliers: use of scientific calculators and computer software for statistical manipulation; application of statistical analysis in biological research.
Assessment: Continuous assessment: Student progress will be assessed through minimum one project assignment (25%), three assignments (10% each), three 1 hr tests (15% each).
Examination: 1 X 3hour examination paper. In this exam use of a calculator is allowed and statistical tables and formulae will be provided.

V3642EM MOLECULAR BIOLOGY

Proposed NQF Level: 6 **Credits:** 8 **Contact Hours:** Lectures: 2x 1hr lectures / week for 13 weeks
Practicals: 1x 3hr practical / alternate week for 13 weeks

Content: **Introduction to Molecular Biology**: historical perspectives of Molecular Biology; overview of the current advances of Molecular Biology
Gene Structure and Function: review of structure of nucleic acid; overview of prokaryotic gene structure; overview of eukaryotic gene structure and non-coding DNA; structural organisation of eukaryotic chromosomes; morphology and functional elements of eukaryotic chromosomes; transposable DNA elements; genome wide analysis of gene function and structure; DNA replication and fidelity of replication; transcription and translation in prokaryotes eukaryotes (transcriptome and proteome- general account); gene expression regulation in prokaryotes and eukaryotes; DNA damage, repair and recombination; exchange of genetic information between bacteria; molecular basis of genetic disorders.
Basic Nucleic Acid Techniques: isolation of DNA and RNA from cells; restriction enzymes and their use in Molecular Biology; cleaving and joining of DNA molecules; nucleic acid amplification techniques; importance of nucleic acid amplification; Polymerase Chain Reaction (PCR) and its applications (Real-Time PCR and its application); other nucleic acid amplification techniques; post amplification detection methods; nucleic acid and protein blotting techniques: Southern, northern and western blotting.

Assessment: Continuous assessment: Minimum of two (2) theory tests (total contribution of 60%), at least one (1) marked practical test (total contribution of 30%) and laboratory reports (total contribution of 10%).

Final examination: One (1) 2hr theory paper (100 marks).

THIRD YEAR LEVEL

V3721EV VETERINARY PROFESSIONAL SKILLS III

Proposed NQF Level: 7 **Credits:** 8 **Contact Hours: Lectures:** 1x 1hr lecture / week for 5 weeks

Content: Personal branding & purpose: Who am I? What do I contribute to the world?
Emotional Intelligence: Managing emotions; Compassion / burnout
Effective conflict management and interpersonal skills: Conflict styles
Effective communication: with colleagues, staff, seniors, health care teams
Client communication: Listening skills; Non-verbal communication
English writing skills for business: email; letters; reports; referrals
Professional behaviours: Good manners; Dress for success
Online presence: Social media; print and electronic media; public presentations
Problem solving: Flexibility and creative thinking; six thinking hats; lifelong learning
Compassion: Empathy; integrity; concern for others; collegiality
Cambridge-Calgary Consultation Model
A philosophical approach to addressing the following questions: How do professionals deal with work pressure and remain motivated? How is professionalism promoted and encouraged among professionals? How do professional fields control and empower their members?

Assessment: Continuous Assessment: 1 assignment for final CA mark (e.g. written assignment, group assignment, role-play and / or presentation).
Continuous participation assessment during compulsory lecture attendance**.**

V3722CC CLINICAL DIAGNOSTICS

Proposed NQF Level: 7 **Credits:** 9 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Common diagnostic procedures used in key domestic animals
Thorough, systematic, species specific clinical examination
Principles of clinical pathology
Problem oriented medical record keeping
Communication to clients
Anatomical landmarks for injection sites
Principles and procedure of diagnostic decision making.

Assessment: Continuous assessment: Continuous Assessment: Minimum 1 theory assessment per species and at least 4 marked practical assessments (clinical examination of each species in the form of OSCEs)

V3721PF FISH AND BEE MEDICINE

Proposed NQF Level: 7 **Credits:** 9 **Contact Hours:** Lectures and Practical: Integrated 3hrs / week for 16 weeks (blocked)

Content: Fish medicine: overview of fish anatomy; fish husbandry; aetiology, diagnosis, pathology, pathogenesis, chemotherapy, control, and management of infectious and non-infectious diseases of fish, especially pertaining to cultured food and tropical fish; introduction to aquaculture; water quality; diagnostic approach in aquaculture; treatment approach in aquaculture.; fish diseases: fungal, bacterial, parasitic, toxic & viral; fish anatomy; fish anesthesia
Bee medicine: honeybee husbandry; aetiology, diagnosis, pathology, pathogenesis, control, and management of infectious and non-infectious diseases of bees; bee biology; bee beekeeping; bee diseases: bacterial bee diseases, fungal bee diseases, parasitic bee diseases, viral bee diseases, multifactorial and environmental syndromes.
Assessment: The module will only be assessed through formative assessments, with no final examination. The continuous assessments will comprise of a minimum 2 theory assessments, 1 assignment, and at least 1 marked practical assessment

V3711AI INFECTIOUS DISEASES I

Proposed NQF Level: 7 **Credits:** 17 **Contact Hours:** Lectures: 4x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Aetiology, transmission, vectors, clinical signs, pathogenesis of bacterial and fungal diseases and the specific host defences.
Diagnosis of specific diseases based on isolation, biochemical tests, culture and staining of bacteria and fungi.
Treatment and control of notifiable and tropical diseases.
Assessment: Continuous Assessment (CA) will entail a minimum of 2 theory assessments in a form of tests (each 100 marks) and at least 5 marked practical assessments (each 20 marks) and 2 assignments (each 10 marks).
CA [30% Theory and 10% (Practical+ Assignments)]

Examination: 1x 3hr theory paper

V3731AP VETERINARY PARASITOLOGY I

Proposed NQF Level: 7 **Credits:**17 **Contact Hours:** Lectures: 4x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Introduction to general parasitology: terminology used in parasitology; general morphology, biology and general characteristics of various parasite classes.
General parasitology: parasites and parasitism; types of hosts; host-parasite relationships; mode of transmission of parasites; methods of dissemination of infective stages of parasites; parasite specificity in relation to species, breed, sex and location; immunity against parasitic infestations.
Helminthology: classification of helminths; characteristics of main groups; life cycle of helminths in relation to transmission, pathogenesis, epidemiology, diagnosis; general control measures of trematodes, cestodes and nematodes of veterinary importance in the region; diagnosis, treatment and prevention of diseases caused by helminths; biological control of endoparasites.

Assessment: Continuous assessment: Minimum of two (2) theory tests (total contribution of 60%), at least one (1) marked practical test (total contribution of 30%) and laboratory reports (total contribution of 10%).
Final examination: One (1) 3hr theory paper (150 marks) and one (1) practical 2hr paper.

V3703AD VETERINARY PHARMACOLOGY

Proposed NQF Level: 7 **Credits:**18 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks per semester
Tutorial: 1x 3hr tutorial or field trip / alternate week for 16 weeks per semester

Content: **Basic pharmacotherapeutic principles**
Pharmacodynamics
Pharmacokinetics
Classification of drugs
Legal requirements for dispensing, prescribing and record keeping of veterinary drugs
Functional pharmacology
Chemotherapeutics
Systemic drugs acting on the various organ systems
Assessment: Continuous assessment: Minimum 4 theory assessments as well as quizzes and assignments.

Examination: 1 x 3hr theory paper (80%) and 1 x 2hr dosage calculation paper (20%) (subminimum 50%)

V3723AG GENERAL PATHOLOGY

Proposed NQF Level: 7 **Credits:** 18 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / alternate week for 16 weeks per semester

Content: Common post mortem changes.
Disease detection / diagnosis after somatic death.
Cell responses to different grades of stimuli / injuries (cellular adaptation), cellular/tissue lesions and death, inflammation and repair.
Lesions due to disturbance of growth and cell differentiation, genetic derangements, degenerative lesions and necrosis.
Lesions due to circulatory disturbances, hypersensitivity and aberrant immunological reactions.
Techniques used in post mortem examination.
Attend necropsies.
Assessment: Continuous assessment: Minimum 4 (2 per semester) theory assessments (1hr - 60marks – each test count 30%) and at least 4 marked practical tests contributing to 30 % and 10% for post mortem reports.
Examination: 1 x 2hr practical examination and 1 x 3hr theory paper

V3701CS VETERINARY GENERAL SURGERY

Proposed NQF Level: 7 **Credits:** 9 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Surgical instrumentation: basic soft tissue and orthopaedic instrumentation characteristics and use.
Surgical haemostasis: application of different method of haemostasis, including physical, electrosurgical, and pharmacological haemostasis.
Suture materials: various suture material characteristics and use.
Suture patterns and techniques: suture pattern classification and use.
Principles of asepsis: patient and surgeon preparation, including patient and surgeon scrubbing, gowning, gloving, draping, and Halsted principles.
Disinfectants, antiseptics and sterilization: various disinfectant and antiseptic characteristics and use, as well as methods of sterilization.
Traumatology: introduction to the surgical principles of traumatology.

Wound healing: stages of wound healing and associated complications.
Wound infection: detection, treatment and prevention of surgical wound infection.
Wound management: wound evaluation, lavage, debridement, drainage, and closure.
Bandaging: bandage materials, composition, principles, and complications, as well as various types and use.

Assessment: Continuous assessment: Theory: 2 class tests, 2 quizzes, 2 class assignments
Practical: 2 OSCEs, 1 group work assessment, 1 flipped classroom presentation
The final continuous assessment mark will constitute a weighting of 100% of the final mark.

V3763AT TOXICOLOGY & ETHNO-VET MEDICINE

Proposed NQF Level: 7 **Credits:** 18 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 4x 2hr field trips / year

Content: **Nature, effects and detection of various types of poison and poisoning**
Treatment of poisoning
Identification, habitat, and phenology of relevant toxic plants of importance in the livestock industry in Namibia
Effects of relevant toxic plants on various species, economic importance, and treatment
Identification, collection and preservation of toxic and medicinal plants of importance to livestock in Namibia.
Indigenous Knowledge Systems (IKS) as related to the use and application of herbal and traditional medicines; identification, collection and preparation of medicinal plants
Traditional Medicine Systems (TMS); **the practice of ethno-veterinary medicine as related to the different farming systems in developing countries and particularly in the communal areas in Namibia.**
Assessment: Continuous assessment: Minimum 2 theory assessments per semester. Collection, identification and preservation of at least 20 plants throughout the year will be assessed for the CA mark.
Examination: 1 x 1hr practical examination to identify plants and poisons and 1 x 3hr theory paper.

V3732AP VETERINARY PARASITOLOGY II

Proposed NQF Level: 7 **Credits:** 17 **Contact Hours:** Lectures: 4x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Entomology: classification of veterinary ectoparasites (e.g., mosquitoes, biting flies, fleas, lice, ticks and mites) relevant to Namibia and southern Africa; morphology and biology of various arthropod ectoparasites; life cycle and diagnosis of selected species;; parasitic role of different ectoparasites and their economic impact and human impact; vector role of different ectoparasites and/or intermediate hosts of protozoan/rickettsial diseases; control methods for ectoparasites including role and importance of biological control methods and chemical control and its effects on the environment; emergence of drug resistance and ways of mitigating resistance emergence.
Protozoology & Rickettsia: classification of protozoa and rickettsia; pathogenesis, pathology and clinical signs associated with various specific genera and/or species; diagnosis of different genera and/or species; control of different protozoa and rickettsia; use of vector control as a method of controlling specific protozoa and/or rickettsia.
Assessment: Continuous assessment: Minimum of two (2) theory tests (total contribution of 60%), at least one (1) marked practical test (total contribution of 30%) and laboratory reports (total contribution of 10%).
Final examination: One (1) theory paper (150 marks) and one 2hr practical paper

V3712AI INFECTIOUS DISEASES II

Proposed NQF Level: 7 **Credits:** 17 **Contact Hours:** Lectures: 4x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Virus families of veterinary importance: associated diseases in different animal species; aetiology, pathogenicity, pathogenesis, clinical signs, diagnosis, prevention and control
Prions and prion diseases.
Assessment: Continuous Assessment (CA) will entail a minimum of 2 theory assessments in a form of tests (each 100 marks) and at least 5 marked practical assessments (each 20 marks) and 2 assignments (each 10 marks).
CA [30% Theory and 10% (Practical+ Assignments)]
Examination: 1 x 3hr theory paper

V3702CA VETERINARY ANAESTHESIOLOGY

Proposed NQF Level: 7 **Credits:** 9 **Contact Hours**: Lectures: 2x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: The anaesthetist's role for safe anaesthetic management of patients using injectable and inhalation anaesthetics: patient evaluation; selection and knowledge of premedication, induction and maintenance anaesthetic drugs; anaesthetic equipment; monitoring depth of anaesthesia; physiologic function.
Species-specific differences in drug and equipment choices/requirements.
Assessment: Continuous assessment: Minimum of 2 theoretical assessments and 1 marked assignment (33% each for CA)

Examination: 1 x 2 hour theory paper

V3721CD VETERINARY DIAGNOSTIC IMAGING

Proposed NQF Level: 7 **Credits:** 9 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Radiographic and ultrasound machines: the components, functions, and use of a radiographic and ultrasound machine, respectively.
Radiation safety: measures of radiation; exposure; and radiation protection.
Principles of radiography: overview of the general principles related to radiography; including collimation; grids; intensifying screens; radiographic film; film processing; quality evaluation; contrast resolutions; and technique charts.
Radiographic positioning and species differences: positioning techniques and radiography species differences, including those related to the thorax, abdomen and musculoskeletal system.
Radiographic interpretation: radiographic opacity; radiographic geometry; radiographic perception; and systematic evaluation of soft tissue and bone opacity changes.
Principles of ultrasonography: overview of the general principles related to ultrasonography; including attenuation; resolution; transducers; and interpretation of echogenicity.
Abdominal ultrasonography: approach to conducting a basic abdominal ultrasound scan.
Contrast media and techniques: classification and use of contrast media procedures.
Introduction to digital radiography, computed tomography, magnetic resonance imaging, nuclear medicine, dental radiography, and echocardiography: overview of different diagnostic imaging modalities.

Assessment: Continuous assessment: Minimum of 2 theoretical assessments and 1 marked practical assessment.

Examination: 1 x 2 hour integrated theory paper

FOURTH YEAR LEVEL

V3822EV VETERINARY PROFESSIONAL SKILLS IV

Proposed NQF Level: 8 **Credits:** ,9 **Contact Hours:** Lectures: 1x 1hr lectures / week for 16 weeks
Content: Business management: human resource management
Business strategy and annual planning: goal setting; budgeting
Management and Leadership: leadership styles
Employee management: performance management, goal setting; appraisals; motivation; training & development, career management
Namibian Labour Law: high level overview; managing labour relations
Organisational change management
Disease reporting to relevant competent authorities (MOHSS and MAWLR).
Veterinary ethics
Assessment: Continuous assessment: Minimum 2 assessments and 2 assignments for final CA mark (e.g. written assignment, group assignment, role-play and / or presentation).
Continuous participation assessment during compulsory lecture attendance

V3822AL FIELD PRACTICAL TRAINING: LABORATORY

Proposed NQF Level: 8 **Credits:** 9 **Contact Hours:** Lectures and Practical: Integrated 3hrs / week for 4 weeks
Content: Quality assurance
CVL departments: Clinical microbiology, Serology, Biotechnology, Food hygiene section, Toxicology and residue analysis, Pathology (Parasitology, Histopathology and Rabies)
Assessment: Each student fill in a logbook and the section supervisor assesses the student using a rubric prepared by the module coordinator out of 100. The report (logbook) is further assessed by the module coordinator who gives it an academic mark. This mark constitutes 60% against 40% of the marks by the section supervisor. The student will receive a calculated final mark based on these criteria. There is no exam for this module**.**

V3821CC CLINICAL PATHOLOGY

Proposed NQF Level: 8 **Credits:** 10 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content:
Haematology: sample collection; preparation; and interpretation of results for routine haematology; including blood smear preparation and evaluation; and interpretation of a complete blood count.
Cytology: sample collection; preparation; and systematic approach to evaluation of cytological samples; Discussions include cytology of the lymph nodes, liver, and body cavity fluids; as well as cytological characteristics of neoplasia.
Biochemistry: sample collection; preparation; and interpretation of results for routine biochemistry related to various organs systems; including the kidneys, liver and pancreas; Discussions include interpretation of enzymes, proteins, electrolytes, minerals and ketone bodies.
Urinalysis: sample collection; preparation; and interpretation of results for routine urinalysis, including organoleptic test, determination of urine specific gravity; urine dipstick analysis; and sediment evaluation; interpretation of proteinuria.

Assessment: Continuous assessment: Theory: 2 class tests, 2 quizzes, 2 class activities
Practical: 2 OSCEs, 1 group work assessment, 1 flipped classroom presentation
The final continuous assessment mark will constitute a weighting of 100% of the final mark.

V3803AS SYSTEMIC PATHOLOGY

Proposed NQF Level: 8 **Credits:** 20 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / alternate week for 16 weeks per semester

Content: Diseases affecting body systems: cardiovascular system; central nervous system; haemolymphatic system; urinary system; musculoskeletal system; respiratory system; integumentary system; female reproductive system and the udder; male reproductive system; endocrine system; digestive system; hepatobiliary systems; pathology of the eye and ear.
Major and common malformations: characteristic feature**s**
Degenerative lesions: gross and microscopic pictures
Inflammatory lesions: gross and microscopic pictures
Tissue lesions due to diseases
Specific lesions peculiar to the systems
Parasites found in the system: their effects
Neoplasms: especially primary neoplasms affecting the system**.**

Assessment: Continuous assessment: Minimum 4 (2 per semester) theory assessments (1hr - 60marks – each test count 30%) and at least 4 marked practical tests contributing to 30 % and 10% for post mortem reports.
Examination: 1 x 2hr practical examination and 1 x 3hr theory paper

V3811AV VETERINARY PUBLIC HEALTH I

Proposed NQF Level: 8 **Credits:** 19 **Contact Hours:** Lectures: 3x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Introduction to the One Health Concept: The history and evolution to One health; One health, Interface and health-related interfaces; One health in the southern Africa; A systematic approach to One health at interfaces.
Emerging and re-emerging diseases at human/animal interfaces: Define a reservoir of infection; Discuss drivers of emerging diseases; listing examples of emerging human pathogens from animal reservoirs; List neglected tropical diseases and explaining the reasons for underdiagnosing and neglect of these diseases
Basic principles of food safety and food safety system development: pre-requisites; HACCP principles
Development and enforcement of laws and regulations impacting food animal processing industries and food consumers: traceability; ante- and post-mortem inspection; certification requirements.
Practices relevant to national, regional and international trade requirements.

Assessment: Continuous assessment: Minimum 2 theory assessments (1hr - 60marks – each test count 30%) and at least 4 marked practical tests contributing to 40%.

Examination: 1 x 3hr theory examination

V3813CC COMPANION ANIMAL CLINICAL STUDIES I

Proposed NQF Level: 8 **Credits:** 40 **Contact Hours:** Lectures: 3x 1hr lectures / week for 16 weeks per semester
Practical:
1x 3hr practical / alternate week for 16 weeks per semester
3-6hrs integrated lectures and practicals per week

Content: Main Topics: Pathophysiology; Diagnosis; Clinical Management; Best Treatment Options of disease processes affecting various organ systems.
Subtopics: Medicine; Surgery; Applied Clinical Pathology; Applied Diagnostic Imaging; Clinical Diagnostics.
In this is a multi-disciplinary module the above main topics and subtopics are integrated to equip the student with a holistic blended approach to the diagnosis, treatment and prevention of diseases in small animal patients.
The module content is in compliance with the requirements of current Namibian veterinary legislation and subject to audit by the Namibian Veterinary Council
Assessment: Continuous assessment: Minimum 2 theory assessments and 1 practical test in each semester, a minimum total of 4 theory assessments and 2 practical tests per year

The final examination consists of 1 x 3hr integrated written theory paper, as well as a 20 min oral examination.
The theory paper will contribute 80% towards the examination mark and the oral will contribute 20%.

V3831PA PRODUCTION ANIMAL CLINICAL STUDIES I

Proposed NQF Level: 8 **Credits:** 19 **Contact Hours:** Lectures: 3x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Pigs: Nutrition and related disorders of pigs. Diagnosis and treatment of important parasitic and infectious diseases and other miscellaneous conditions; applied surgical techniques; herd basis strives improvement of the health status and production effectiveness of piggeries from a holistic and cost-effective viewpoint.

Poultry: Avian anatomy and physiology; poultry flock health and management programmes, including vaccination programs, aspects of housing and production systems, nutrition and nutritional diseases. Diagnosis and treatment of parasitic, infectious and management-related diseases of importance in the poultry industry.

Assessment: Continuous assessment: Minimum 2 theory assessments and at least 3 marked practical assessments.

The final examination consist of 1 x 3hr integrated theory paper, as well as a 15 min oral examination. The theory paper will contribute 80% towards the examination mark and the oral will contribute 20%.

V3823PR THERIOGENOLOGY I

Proposed NQF Level: 8 **Credits:** 20 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / alternate week for 16 weeks per semester

Content: Applied anatomy of the male and female reproductive organs
Physiology of the reproduction cycles including spermatogenesis and oogenesis.
Introduction to semen evaluation and andrology in selected animals
Semen evaluation, semen preservation and breeding manipulation: general reproduction for livestock species, including canine, feline and porcine.

Assessment: Continuous assessment: Minimum 4 theory assessments and at least on 2 marked practical assessment. Theory and practical assessments will constitute 75% and 25%, respectively, of the total continuous assessment mark. The rest of the practical shall be signed off in the Skills Log Book as per Day-one competency requirements.
Examination: 1 x 2hr practical examination (25%) and 1 x 3hr theory paper (75%).

V3863PC WILDLIFE CLINICAL STUDIES I

Proposed NQF Level: 8 **Credits:** 20 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / alternate week for 16 weeks per semester

Content: Wildlife in Namibia: Namibia – water, land use, wildlife numbers, economic returns; effects of climate change; value of wildlife in Namibia today and in the future

Conservation: key terms in wildlife conservation; conservation principles in terms of wildlife management, successful conservation, approaches to conservation, wildlife value; community involvement in successful conservation; relevant Namibian legislation; components of wildlife protection; components of wildlife biology and behavior; habitat; range; management principles; population dynamics; management styles

Game Ranching: four pillars of game ranching; nutrition management practices; genomics; Intentional Genetic Manipulation; negative impacts of selective and intensive breeding; Namibia's "Golden Opportunity"

Veld Management for Wildlife: types of vegetation occurring; land degradation; natural veld managers; ecological disturbance; grazing management practices

Disease Ecology: ecological, epidemiological and disease emergence concepts; the Ecosystem; Ecosystem interferences; epidemiological concepts; disease emergence; disease categories

One Health: mitigation of effects of crises that originate at the interface between humans, animals and their various environments including antibiotic resistance

Emerging and Re-Emerging Diseases

Wildlife Diagnosis/Effects of Disease in Wildlife: diagnostic process; origin of (emergence of) disease; potential negative impacts of disease

Wildlife Disease Management (Prevention and Control): disease management options; strategies to prevent and control disease; wild animal population management in Namibia to control disease in domestic animals

Snake Bite Management in Animals

Game Camp Design

Wildlife Diseases: epidemiology; clinical picture; diagnosis and control of selected diseases including Bovine TB; Anthrax; Brucellosis; Rabies, MCF; Canine Distemper Virus; Theileriosis and epidemiology of Bovine Viral Diarrhoea; Rift Valley Fever; Canine Parvovirus; Feline Herpes; Coronavirus; Retroviruses; Elephant viruses; Heartwater; Anaplasma, Babesia and trypanosomes.

Transboundary Animal Diseases (TADs): including FMD; African Horse Sickness; PPR; African Swine Fever

Parasites of Wildlife: endo and ecto-parasite control

Chemical Wildlife Poisoning

Wildlife Pathology, the Post Mortem, Sample Collection and Forensics

Disease Surveillance in Wildlife

Wildlife Trade – Legal and Illegal

Wildlife Monitoring
Wildlife Legislation
Safety in Wildlife Practice
Ethics and the Wild Animal
Drug injection systems for game capture
Physical Capture of Wildlife: including plastic mass-capture boma; net gun; helicopter; box / cage trap; free-darting
Wild Animal Transport Systems and regulations
Wild Animal Holding Facilities and Management
Capture related deaths and Injuries
Record Keeping in Wildlife Veterinary Practice
Human Wildlife Conflict & Mitigation
Hand Rearing the Captive Wild Animal

Assessment: Continuous assessment: Test 1 – 4 (15% each); Clinical / Practical Scenarios (40%). Additionally there may be adhoc quizzes, debates, class discussions.
Final Exam: Paper: 1x 3hr theory paper (75% of final exam points); Practical: 1x 1hr practical exam (25% of final exam points)

V3843AE VETERINARY EPIDEMIOLOGY

Proposed NQF Level: 8 **Credits:** 20 **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks in per semester
Practical: 1x 1hr tutorial / week for 16 weeks per semester

Content: Introduction to epidemiological concepts, definitions, purpose, meaning and scope: disease causation; intrinsic and extrinsic determinants of disease; disease ecology; disease transmission; disease events in populations; measuring disease frequency and production; host-agent-environmental interaction; temporal, spatial and clustering factors; epidemiological and statistical measures of association; concepts of bias; confounding and interaction variables and control; application of concepts; design of observational epidemiological studies; sampling methodology; sample size determination; principles and concepts of diagnostic-test validation and performance and clinical trial
Data and information management: principles and applications of questionnaire design; use of geographic information systems; concepts of monitoring and surveillance; survey design; introduction to risk analysis; planning, designing, managing and implementing disease control; eradication programmes; emergency preparedness and contingency planning.
Assessment: Continuous Assessment (CA) will entail a minimum of 2 theory assessments in the form of tests each allocated 100 marks and at least 5 marked tutorial assessments each allocated 20 marks and 2 assignments each allocated 10 marks.
CA (30% Theory and 10% Practical)
Examination: 1 x 3hr theory paper

V3812AV VETERINARY PUBLIC HEALTH II

Proposed NQF Level: 8 **Credits: 1**9 **Contact Hours:** Lectures: 3x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Global strategies to prevent and control pathogens, and elaborate on the development and coordination of human–animal–ecosystems interfaces applicable at the national, regional and global levels
Climate change and environmental pollution (especially waste and waste management): implications and preventative measure and solutions to the current situations.
Veterinary public health programmes and overarching principles of food control systems: possible infrastructures and approaches for national and international systems.
Globalization of the food supply chain
Increasing importance of the Codex Alimentarius Commission
Obligations emerging from the World Trade Organization (WTO) Agreements

Assessment: Continuous assessment: Minimum 2 theory assessments (1hr - 60marks – each test count 30%) and at least 4 marked practical tests contributing to 40%.

Examination: Minimum 20 minutes per student for practical examination and 1 x 3hr theory paper

V3832PA PRODUCTION ANIMAL CLINICAL STUDIES II

Proposed NQF Level: 8 **Credits: 20** **Contact Hours**: Lectures: 3x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / week for 16 weeks

Content: **Common disorders of the major body systems of cattle, sheep and goats:** clinical signs, diagnostic tests and treatment options for disorders of individual animals as well as herd management; preventative care; selected surgical procedures.
Pathophysiology, symptomatology, differential diagnoses, diagnostic approach, clinical management (medical and surgical) and prognosis of the more important/common clinical conditions affecting cattle, sheep and goats related to relevant systems

Assessment: Continuous assessment: Minimum 2 theory assessments and at least 3 marked practical assessments. Examination: 1x 3hr integrated theory paper, as well as a 15 min oral examination. The theory paper will contribute 80% towards the examination mark and the oral will contribute 20%.

FIRTH YEAR LEVEL

V3821AR RESEARCH METHODOLOGY

Proposed NQF Level: 8 **Credits: 10** **Contact Hours**: Lectures: 1x 1hr lecture / week for 6 weeks
Tutorial: 2x 1hr online tutorial / week for 6 weeks

Content: **Research process:** research problem formulation and research objectives; research methods and principles of research; experimental design; sampling methods including sample size determination and replication; ethics of research; the scientific method; observations, asking questions and formulation of hypothesis (null and alternative); predictions.
Scientific writing: literature review; research proposal; report writing; plagiarism; finding and using literature references; citation of references; presentation of results.
Assessment: Continuous assessment: 6 evaluated weekly assessments (CA 100%).

Assignment 1: Ethical principals in research (10%)
Assignment 2: Effectively retrieve and manage information (15%)
Assignment 3: The principles of the scientific method (10%)
Assignment 4: Project planning and budgeting (10%)
Assignment 5: Design a research proposal, with timetable (35%)
Assignment 6: Design an effective oral presentation (20%)

V3842EV VETERINARY PROFESSIONAL SKILLS V

Proposed NQF Level: 8 **Credits: 9** **Contact Hours**: Lectures: 3x 1hr lectures / alternate week for 6 weeks

Content: Goal setting and annual planning
Business strategy: annual planning implementation, M&E, budgeting
Organisational performance management
Employee management: motivation; training & development, career management
Organisational change management
Finding your niche: CV and cover letter writing, job search, job applications, interviews, professional networking, practical experience, being relevant
Veterinary ethics
Interpretation of applicable legislation for state veterinary offices

Assessment: Continuous assessment: Minimum 2 assessments and 2 assignments for final CA mark (e.g. written assignment, group assignment, role-play and / or presentation).
Continuous participation assessment during compulsory lecture attendance.

V3883AR RESEARCH PROJECT

Proposed NQF Level: 8 **Credits: 40** **Contact Hours**: Lectures:
2x 1hr lectures / week for 10 weeks in semester 1
2x 1hr lectures / week for 16 weeks in semester 2

Content: Independent research on a chosen topic in any field related to veterinary medicine**.**
Assessment: Continuous Assessment 100%: Oral presentation (25%) and publishable written research report (75%)

V3833CC COMPANION ANIMAL CLINICAL STUDIES II

Proposed NQF Level: 8 **Credits: 40** **Contact Hours**: Lectures: 4x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / week for 16 weeks per semester

Content: Main Topics: Pathophysiology; Diagnosis; Clinical Management; Best Treatment Options of disease processes affecting various organ systems and species as outlined above.
Subtopics: Medicine; Surgery; Applied Clinical Pathology; Applied Diagnostic Imaging; Clinical Diagnostics; Ovario-hysterectomy; Emergency treatment; Critical Care; Dental Procedures; Behaviour; Cage birds; Small mammals and Reptiles.

In this is a multi-disciplinary module the above main topics and subtopics are integrated to equip the student with a holistic blended approach to the diagnosis, treatment and prevention of diseases in small animal patients.
The module content is in compliance with the requirements of current Namibian veterinary legislation and subject to audit by the Namibian Veterinary Council.
Assessment: Continuous Assessment: Minimum 2 theory assessments and 1 practical assessment in each semester, and at least 6 theory assessments and 3 practical assessments per year

Examination: 1 x 3hr integrated written theory paper, as well as a 20 min oral examination.
The theory paper will contribute 80% towards the examination mark and the oral will contribute 20%.

V3843PR THERIOGENOLOGY

Proposed NQF Level: 8 **Credits: 20** **Contact Hours:** Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / alternate week for 16 weeks per semester

Content: Physiology of reproductive cycles in selected domestic animals.
Manipulation of oestrus and ovulation synchronization in selected farm animals: Principles of assisted animal reproduction in livestock and equines
Diagnose, manage and resolve dystocia cases in selected domestic animals: Caesarian sections and other interventions
Principles of assisted animal reproduction in livestock and equines: breeding soundness examination; semen collection and processing; reproductive cycle synchronization; artificial insemination; embryo transfer**.**
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Assessment: Continuous Assessment: Minimum 4 theory assessments and at least on 2 marked practical assessment. Theory and practical assessments will constitute 75% and 25%, respectively, of the total continuous assessment mark. The rest of the practical shall be signed off in the Skills Log Book as per Day-one competency requirements.
Examination: 1 x 2hr practical examination (25%) and 1 x 3hr theory paper (75%).

V3851PA PRODUCTION ANIMAL CLINICAL STUDIES III

Proposed NQF Level: 8 **Credits: 20** **Contact Hours**: Lectures: 4x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / week for 16 weeks

Content: Common disorders of the major body systems of cattle, sheep and goats: clinical signs, diagnostic tests and treatment options for disorders of individual animals as well as herds and flocks; preventative care and selected surgical procedures.
Musculoskeletal diseases
Neurology
Dermatology
Urology
Nephrology
Assessment: Continuous Assessment: Minimum 2 theory assessments and at least 3 marked practical assessments

Examination: 1x 3hr integrated paper (80%), and a 15 minutes practical examination (20%)

V3801PC WILDLIFE CLINICAL STUDIES II

Proposed NQF Level: 8 **Credits: 10** **Contact Hours**: Lectures: 2x 1hr lectures / week for 16 weeks
Practical: 1x 3hr practical / alternate week for 16 weeks

Content: Physiology for Chemical Restraint: nervous, cardiovascular, gastrointestinal, respiratory systems
Pharmacology for Wildlife
Specific Chemical Restraint Veterinary Medicines
Opioids: Agonists: etorphine, fentanyl, thiafentanil (carfentanil); Mixed agonists/antagonists: butorphanol (nalbuphine, nalorphine); Antagonists: diprenorphine, naltrexone, naloxone
Cyclohexylamines: Dissociative anaesthetics (ketamine and tiletamine); combinations (ketamine/medetomidine; tiletamine/zolazepam)
Sedatives & Tranquilizers: azaperone; haloperidol; zuclopenthixol; perphenazine; diazepam, midazolam; zolazepam; xylazine, detomidine, medetomidine; romifidine
Other Game Capture Vet meds: depolarising neuromuscular blockers; non-depolarising neuromuscular blockers; Doxapram; Hyaluronidase; Biperidine; oxygen; analgesics and anti-inflamatories (meloxicam)
Accidental Human Exposure: appropriate first aid in the case of accidental human exposure to S5 drugs
Megaherbivores capture, care and transport
Antelope capture, care and transport
Carnivores capture, care and transport
Monitoring Immobilisation

Responding to Critical Immobilisation Scenarios
Humane Euthanasia of Wildlife
Wildlife Legislation in Namibia & Record Keeping for wildlife in Namibia
Wildlife Ethics
Assessment: Continuous Assessment: Test 1 and 2 (35% each); Dosage calculations (5%); Basic Life Support (10%); Field Trip (15%). Additionally, there will be ad hoc quizzes, debates, class discussions

Examination: Theory Paper: 1x 2hr paper (75% of final exam points); Practical: 1x 2hr practical exam (25% of final exam points). The fatal flaw concept will be applied during the practical examination (anesthesia of a wild animal). Committing a fatal flaw during this examination will result in failure of the module with a sub minimum mark.

V3823CH EQUINE CLINICAL STUDIES

Proposed NQF Level: 8 **Credits: 20** **Contact Hours**: Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / alternate week for 16 weeks per semester

Content: Detailed General Clinical Examination of the horse
International equine identification criteria
Insurance certification
Pre-purchase examination of horses
Diagnosis, treatment and control of conditions and diseases affecting the various organ systems of the horse.
Infectious and parasitic diseases, clinical diagnostics, clinical pathology, diagnostic imaging, medical and surgical treatment options as well as preventative measures.
Gastro-enteric, cardio-vascular, urinary and respiratory diseases and conditions.
Musculoskeletal disorders: incidence; pathophysiology; and diagnosis of lameness.
Equine dentistry: comprehensive dental examination; routine floating of teeth.
Neurology: neurological examination.
Disorders affecting the central and peripheral nervous systems
Dermatology: diseases of the skin and hooves**.**
Common disorders of the haemolymphatic system
Ophthalmology: systematic examination of the eye; most common disorders**.**
Oncology: basic diagnosis and treatment of important equine neoplasms**.**
Endocrinology: most relevant endocrine conditions**.**
Assessment: Continuous Assessment: Minimum 2 theory assessments per semester and one practical test.

Examination: 1 x 3hr written integrated theory paper, as well as a 15 min oral examination.
The theory paper will contribute 80% towards the examination mark and the oral will contribute 20%.

V3823PH HERD HEALTH MANAGEMENT & ECONOMICS

Proposed NQF Level: 8 **Credits: 20** **Contact Hours**: Lectures: 2x 1hr lectures / week for 16 weeks per semester
Practical: 1x 3hr practical / alternate week for 16 weeks per semester

Content: Herd Health Management: herd health, production and reproduction management programmes in dairy cattle; management of replacement rearing, dry period, milk production, herd fertility, udder health, lactation, nutrition and body condition scoring; biosecurity measures and the containment of diseases; management strategies for newborn animals, weaners and adults; management of metabolic disease conditions, hoof problems and mastitis; record keeping and gynaecological herd health; different parlour types and milking machines. Aspects of herd/flock health, production and reproduction management programmes in cattle and small stock; management of replacement rearing, milk production, herd fertility, and nutrition in cattle; flock health, nutrition and production management of small stock; biosecurity measures and the containment of diseases.
Animal Health Economics: Economical aspects of the dairy herd and productivity schemes; economic importance and contribution of the dairy sector in the Namibian economy. Importance of animal diseases in efficiency of animal production; consumer's perception of animals and animal products; global trade; analysis of economic problems using basic methods such as partial budgeting, cost- benefit analysis and decision analysis; critical steps in systems analysis and appropriate modelling types and techniques, e.g. headmaster; implementation and evaluation of animal health programmes; policy development and implementation process.
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Assessment: Continuous assessment 100%:
Theory: at least 4 class tests
Practical: 5 marked practical assignments
Feedlot challenge: group work applied practical throughout the year

V3872PA PRODUCTION ANIMAL CLINICAL STUDIES IV

Proposed NQF Level: 8 **Credits: 9** **Contact Hours**: Lectures: 2x 1hr lectures / week for 13 weeks

Content: The formulation and implementation of public policy through legislation, regulation and operational strategy. Focus will be on Namibian legislation and the Namibian Constitution.
Namibian legislation: regulating the veterinary profession; veterinary medicines; animal health; certification; animal welfare trade in animals and animal products in Namibia**.**
Legislation governing the practice of veterinary medicine by professionals and para-professionals: the code of conduct; veterinary ethics; rules and standards. Specific Acts: The Veterinary and Veterinary Para-professions Act 1 of 2013, including related Regulations and Rules; The Animal Health Act 1 of 2011 including related Regulations; The Prevention of Undesirable Residue in Meat Act 21 of 1991; The Medicines and Related Substances Control Act 13 of 2003, including related Regulations as amended; The Animal Protection Act 71 of 1962.

Assessment: Continuous assessment 100%: Minimum 2 theory assessments, minimum of 1 assignment, group discussions in class

V3882FO INTEGRATED OSCE EXAMINATION

Proposed NQF Level: 8 **Credits:** Non-credit bearing **Contact Hours**: N.A

Content: Integrated examination covering a variety of clinical skills taught in the following modules:
Clinical Diagnostics, Clinical Pathology, Companion Animal Clinical Studies I, Companion Animal Clinical Studies II, Equine Clinical Studies, Production Animal Clinical Studies I, Production Animal Clinical Studies II, Production Animal Clinical Studies III, Production Animal Clinical Studies IV, Theriogenology I, Theriogenology II, Veterinary General Surgery, Wildlife Clinical Studies I, Wildlife Clinical Studies II
Assessment: Examination entrance is through achieving prescribed CA marks in all pre-and co-requisite modules listed above.
The Objective Structured Clinical Examination (OSCE) consists of a circuit of multiple stations which the students rotate round in sequence, completing a variety of tasks. OSCEs are marked using a detailed checklist accompanied by global rating scores with a pass mark calculated via a borderline regression.
Results are provided to students on the same day of the examination and students will have the opportunity to practice and repeat any failed station(s) until the skill is mastered, within the next five days. To pass the examination, every station must be passed.
Failure of the OSCE examination will result in non-admittance to the BVM VI year.
Examination mark contributes 100% to the final module mark.

Sixth year level

V3883FY CLINICAL ROTATIONS

Proposed NQF Level: 8 **Credits: 231** **Contact Hours**: 51 weeks, all practical

Content: Intensive clinical rotation for 1 year: each student will be exposed to various rotations under supervision of trained registered professional veterinarians and other experts in their fields to develop their clinical skills and attain their "Day One Competencies" as recommended by the WOAH and NVC. Each student will be required to successfully complete a number of clinical rotations including core or compulsory rotations and elective rotations, as per the individual schedule prepared for each student.

Module code	Module name	NQF Level	Credits	Weeks	(Co-requisites) / Pre-requisites
Year 6					
V3883FY	CLINICAL ROTATION	8	231	51	BVM V including integrated OSCE examination
	Theriogenology (Equine, Bovine, Small stock and Canines)				
	Herd Health				
	Veterinary Public Health (Abattoir, Food Safety Systems)				
	Production Animal Clinic and Ambulatory Clinic				
	Small Animal Surgery				

	Cadaver Surgery				
	Anaesthesiology and Pharmacology				
	Equine Clinic				
	Equine Medicine				
	Pathology and Parasitology				
	Private Veterinary Practice				
	State Veterinary Practice				
	Companion Animal Clinic				
	Mobile Animal Clinic				
	Diagnostic Imaging (Radiography, Ultrasonography)				
	Animal Welfare Clinic				
	Isolation Clinic				
	Outpatients Clinic				
	Elective Rotation (Wildlife, Mobile Animal Clinic, Student preference)				
	Veterinary Association of Namibia Congress				

Assessment: Continuous assessment: Compulsory submission of completed clinical skills logbook. Marking rubrics designed for each rotation (subminimum for each rotation 40%). Students who achieve less than 40% for any rotation listed above will not get examination entrance and will repeat the clinical rotation year.

Examination:

A. 2 theory papers:

1. **Paraclinical Veterinary Studies** (all species, incorporating all modules relating to Veterinary Public Health (35%); pathology (35%); epidemiology (15%); Policy, Legislation and Juris Prudence (15%))
2. **Clinical Veterinary Studies** (incorporating all modules relating to companion animals including equines (50%), production animals including wildlife (50%))

B. 2 practical exams:

1. **Practical 1**: practical examination in Veterinary Public Health and Veterinary Pathology
2. **Practical 2:**
    a. Clinical cases workup (clinical reasoning) of a canine or feline (40%), **and** an equine patient (20%), **and** a ruminant patient (40%)
    b. Sterilisation of a dog or cat (50%) **and** pregnancy diagnosis of 4 cows (50%)

Subminimum for each paper, theory 40% and practical 40%.
A pass mark of 50% is required for each of the theory papers and practical examinations.
Final calculation of exam mark: Average of the four sections.

Final mark: 50% continuous assessment (log book plus clinical rotations) and 50% Exam mark
Pass mark: 50%.
Fatal flaw concept applies to Pregnancy diagnoses, Anaesthesiology and Surgery, which constitutes a subminimum mark.

Candidates with a final mark of 45-49%, or 45-49% in any of the four sections above, will be invited to a single opportunity supplementary oral (theory) or practical examination on a maximum of one section, concentrating on the failed section. Those who fail the supplementary oral or practical examination, including any candidates who failed a section or sections with <45%, or committed a fatal flaw during the initial examinations, will repeat relevant rotations and / or lectures over a period of 5 months, and rewrite the failed section(s) in the midyear examination period.

Candidates who achieve a final mark below 45% or who achieve 45-49% in more than one section of the examination will repeat the clinical rotation year and rewrite all sections of the examination.

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