



## Veterinary Education and Curriculum Development: Zambia (Lusaka)

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## Constraints for the livestock industry in Zambia

- Zambia supports over 2 million cattle, 300,000 goats, 32,000 sheep and 200,000 pigs.
- Livestock diseases such as foot-and-mouth (FMD), contagious bovine pleuropneumonia (CBPP), anthrax, trypanosomiasis and tick-borne diseases have greatly restrained the growth of the country's livestock industry.
- The limited veterinary resources available to ensure animal health and promote livestock production aggravate this situation



## Veterinary education in Zambia

- The School of Veterinary Medicine was established in 1983 to meet the critical shortage of qualified veterinary personnel.
- The first class of 14 students was admitted in 1983
- With cooperation of the Government of Japan, a large and well-equipped school was built, 1984-1986



## Veterinary School infrastructure

- The faculty consists of:
  - 4 academic departments, Pre-clinical, Paraclinical, Disease Control and Clinical studies
  - Teaching laboratories
  - Diagnostic laboratories
  - Biosafety level 3 laboratory
  - a Central Support Unit,
  - a Veterinary Academic Clinic
  - Student accommodation
  - total of 44 academic staff
  - 89 support staff



## Undergraduate programme

- The admission of students is aimed at graduating a maximum of 25 veterinarians annually
- The programme of study extends over 6 years and leads to the award of the Bachelor of Veterinary Medicine
- Programme follows the Semester system (2 semesters)



## Objectives of the Undergraduate Curriculum

To produce internationally recognised veterinarians with the following competencies:

- promotion of animal production development in Zambia and elsewhere through improved animal health control, surgical intervention, breeding and nutritional programmes
- promotion of public health through the control of zoonotic diseases and other infections and intoxications transmissible to man through human products
- basic and applied research in the field of veterinary medicine and surgery
- promotion of appropriate livestock and poultry product industries



## Entrance requirements into 1<sup>st</sup> year

- The first year is by entry to the School of Natural Sciences to study Biology, Chemistry, Physics and Mathematics
- Those who qualify are applicants with the General Certificate of Education or the Cambridge Overseas School Certificate with the following:
  - Passes at least 5 subjects including English, either mathematics or an approved Science subject
  - Exceptionally, applicants who present other evidence which in the opinion of Senate, indicates capacity and attainment to pursue the course of proposed study



## Direct entry into 2<sup>nd</sup>/3<sup>rd</sup> year

- This applies to non-school leavers with Diploma in Agriculture or Animal Science with Distinction
- BSc with credit
- BAgric Science with Credit will be admitted into 3<sup>rd</sup> year



## Second year courses

Semester	Course
First	VMB 211 Veterinary Anatomy and physiology
	CAV 251 Chemistry for Agriculture and Veterinary students
	AGG 311 Statistical analysis
Second	VMB 212 Veterinary Anatomy II
	VMB 222 Veterinary Embryology
	C Biochemistry
	AGA 342 Genetics
	AGC 322 Forage Crop Production



## Third year courses

Semester	Course
First	VMB 311 Veterinary Anatomy I
	VMB 321 Veterinary Histology
	VMB 331 Veterinary Biochemistry I
	VMB 341 Veterinary Physiology I
	AGA 311 Principles of Animal Nutrition
Second	VMB 312 Veterinary Anatomy II
	VMB 432 Veterinary Biochemistry II
	VMB 342 Veterinary Physiology II
	AGA 322 Ruminant Production



## Fourth year courses

Semester	Course
First	VMP 411 Veterinary Pathology I
	VMB 431 Veterinary Immunology and Bacteriology
	VMP 441 Veterinary Parasitology I
	VMB 451 Veterinary Pharmacology
	AGA 411 Pig and Poultry production
Second	VMP 412 Veterinary Pathology II
	VMB 432 Veterinary Virology and Mycology
	VMP 442 Veterinary Parasitology II
	AGA 322 Ruminant Production



## The Fifth and Sixth year of study

- Clinical work starts in 5<sup>th</sup> year where the lectures are split between the Departments of Disease Control and Clinical Studies



### Fifth year courses

Semester	Course
First	VMD 511 Veterinary Clinical Pathology I
	VMD 521 Infectious Diseases of Livestock
	VMD 531 Veterinary Epidemiology
	VMC 511 Clinical Veterinary Medicine I
	VMC 521 Principles of General Veterinary Surgery I-Anaesthesiology
Second	VMD 512 Veterinary Clinical Pathology II
	VMD 532 Veterinary Economics
	VMC 512 Clinical Veterinary Medicine III
	VMC 522 Clinical Radiology and Operative Surgery I
	VMC 532 Theriogenology II



### Sixth year courses

Semester	Course
First	VMD 641 Preventive Veterinary Medicine
	VMD 651 Veterinary Public Health I
	VMD 611 Clinical Veterinary Medicine II
	VMC 621 Operative Veterinary Surgery II
	VMC 631 Theriogenology I
Second	VMD 642 Veterinary Extension and Jurisprudence
	VMD 652 Veterinary Public Health II
	VMD 612 Clinical Veterinary Medicine IV
	VMC 622 Operative Veterinary Surgery III



### Practical Hands-on Training

- There is a small animal clinic which is open to the public
- There are well-established diagnostic laboratories that provide services to pet owners, farmers and veterinarians
- There is an ambulatory farm clinic which visits a variety of farms (taking students along) from large commercial enterprises to village small holdings
- These clinics provide a large number of clinical cases for student teaching and demonstrations



### Practical Hands-on Training-cont'd

- The school animal accommodation units include small and large animal hospitalisation quarters, special accommodation for laboratory animals
- Cattle, horses, goats and sheep are kept on 13 ha of paddocks at the rear of the school
- The animals are used for teaching students and for research purposes
- The school has an established field station that provides extension services to the local community while allowing the students to learn about livestock health management
- The school has a library with computerised literature search facilities and an audiovisual laboratory and a museum



### Vacational Practicals (8 weeks during the inter-semester break)

Year	Course
Third	VMB 303 Farm Practicals (on selected farms for 8 weeks)
Fourth	VMP 403 Veterinary Laboratory Practicals (at either the government or private research stations)
Fifth	VMC 503 Veterinary Clinical Practicals (at government or private practice and abattoirs)



### University Examinations

- Written, where appropriate, practical and/or Oral examinations held at end of each semester
- Examiners for all the courses are Professors and Lecturers in the School
- External Examiners may participate in the exams held during the 3-6 years of the programme
- Pass mark is 50%
- Supplementary exams are given to candidates who marginally fail the final exams if they have passed their continuous assessments
- Otherwise, those who fail may REPEAT SEMESTER or are EXCLUDED



### Postgraduate programme (since 1992)

- The School offers a Masters degree in Veterinary Medicine. It is a 2 year programme, first year is course work and second year is research. **Will offer a One Health Regional MSc in Analytical Epidemiology under SACIDS.**
- Minimum requirement for admission is a Bachelor of Veterinary Medicine degree from UNZA or its equivalent
- One year post-qualification experience in full-time veterinary practice
- Candidate may undergo such tests, or take other pre-require or concurrent studies and/or examinations which the School may prescribe
- The School also offers PhD programmes in related fields



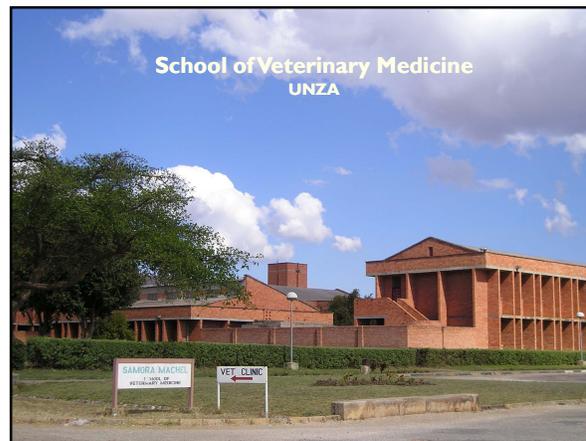
### Postgraduate Programmes

Part I	Course (first semester)	Course (second semester)
	VMM 771 Diagnostic Pathology I,	VMM712 Diagnostic Pathology II
	VMM 731 Diagnostic Microbiology I	VMM 722 Diagnostic Pathology III
	VMM 741 Diagnostic Parasitology I	VMM 732 Diagnostic Microbiology II
	VMM 791 Scientific Methodology	VMM 742 Diagnostic Parasitology II
Part II	<ul style="list-style-type: none"> <li>Each candidate conducts research and is assessed by the School Graduate Studies Committee.</li> <li>Dissertation is examined by the School Board of Examiners</li> </ul>	



### Research activities

- Thematic research is carried out in the school in subjects ranging from emerging and re-emerging diseases to some areas of animal production
- Collaborative research is encouraged
- The school has a Biosafety level 3 laboratory and provides technical expertise to the government on issues of infectious diseases such as avian influenza and influenza A H1N1 (swine flu)





## Challenges

- Inadequate funding in the education sector in general and university education in particular
- Brain drain syndrome
- Inadequate mandates as legislation is outdated.
  - example, issues of meat inspection are not in the hands of veterinarians
- Post graduate programmes and the undergraduate curriculum are currently under review with a deadline of December, 2009



## Veterinary education motivation

- **Sufficient resources**-Governments should improve funding for university education for teaching and research
- **The veterinary legislation should be reviewed so as to broaden the employment base of the veterinarians and veterinary para-professionals**
- **Ownership strategy**-veterinary education curriculum should be harmonised and centers of excellence should be established in the region
- **Motivation**-exchange visits of lecturers, students and research
- **Annual meetings of Deans of Veterinary schools should be initiated**



thank you