

# VETERINARY EDUCATION AND CURRICULUM DEVELOPMENT: SOUTH AFRICA

2009

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## Introduction

- History of veterinary education in South Africa
- Some background of the Faculty Curricular developments
- Current veterinary and veterinary nurses curriculum
- New proposed veterinary and veterinary nurses programme
- A brief description of post graduate programmes
- Recommendations

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## History

- Faculty of Veterinary Science established in 1920

1920 – 1941

- Catered primarily for state

Sir Arnold Theiler

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1942 – 1951

- increasing growth of private practice

1973 – 1980

- Incorporation into UP;
- Increase in student numbers;
- Veterinary nurses

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- 1981 - 1998
  - Second Faculty at MEDUNSA
  - New facilities at Onderstepoort
- 1999 - to date
  - Amalgamation of MEDUNSA and UP
  - Restructuring and development of new Faculty

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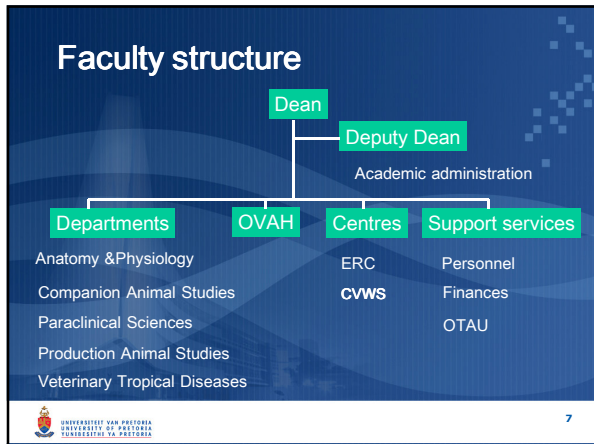
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## Current situation

- Staff component of 113 (94) academic & 241 support staff
- 619 UG veterinary students and 78 veterinary nurses
- 239 PGs (23 Hons, 117 MSc, 44 MMedVet & 55 PhD)
- Excellent infrastructure and Veterinary Academic Hospital

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## Current Veterinary Training Programme



- 7-year programme
  - Consists of a 3-year directed BSc (Veterinary Biology) degree offered full-time on the main campus of UP and on the Onderstepoort campus
  - Followed by a 4-year BVSc degree (professional component) offered full-time on the Onderstepoort campus

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## Professional Programme (BVSc)

- First year: basic and para-clinical
- Second and third years: species-based
- Final or fourth year: lecture-free experiential training



## Reasons for Development of new veterinary curriculum

- Admission and Selection process is rigid
- Selection only occurs late
- Veterinary students not initially identifiable
- Excessively long and costly
- Difficulty of allocation of bursaries
- Little or no control over module content and academic rules
- Little or no insight into student support systems
- General perception that the programme not locally relevant
- Programme heavily overloaded.

## Principles for development of new veterinary curriculum

- **Shorter, single degree programme**
- Alignment with the latest veterinary educational philosophies and approaches
- Meet national needs and expectations
- **Apply a core-elective approach**
- **Reduce overload**
- Review the education format and technologies used in training
- **Review the assessment policy**
- Consider the inclusion of a distributive model for experiential training
- **Add life skills and leadership as an integral component of the core training**
- Review the admission policy

## Day-One competencies

- General professional skills and attributes
  - Legal and statutory requirements and obligations
  - Verbal and writing skills
  - Ethical responsibilities
- Underpinning knowledge and understanding
  - Basic subjects in chemistry, molecular cell biology and physics as well as animal science
  - structure and functions of healthy animals and all aspects of their husbandry
  - aetiology, pathogenesis, clinical signs, diagnosis, pathology, treatment, epidemiology and control/eradication of the common diseases
- Practical competencies and skills

## Proposed new macro-curriculum 1<sup>st</sup> year

THEME - NATURAL SCIENCES	
FIRST SEMESTER	SECOND SEMESTER
Academic literacy	Academic literacy
Computer literacy	Information literacy 1
Mathematics	Biometry
Chemistry	Chemistry
Physics	Introductory Genetics
Molecular and cell biology	Animal Nutrition
Medical Terminology	Introductory Animal Science
	Professional Life

## Proposed new macro-curriculum 2<sup>nd</sup> year

THEME: BASIC VETERINARY DISCIPLINES	
FIRST SEMESTER	SECOND SEMESTER
Veterinary Anatomy + Embryology	
Veterinary Histology	
Veterinary Physiology	
Veterinary Ethology + Genetics	
Animal Science	Animal Ecology
Veterinary Microbiology	Veterinary Immunology
Pasture Science	
Professional Life	

### Proposed new macro-curriculum 3rd year

THEME: CAUSES AND EFFECTS OF DISEASE	
FIRST SEMESTER	SECOND SEMESTER
Veterinary Infectious Diseases	
Veterinary Parasitology	
Veterinary Toxicology	
General Veterinary Pharmacology	
General and Organ Pathology	
Applied Veterinary Physiology	General Surgery
Professional Life	

### Proposed new macro-curriculum 4th year

THEME: DIAGNOSTICS AND THERAPEUTICS	
FIRST SEMESTER	SECOND SEMESTER
Small Animal Medicine and Surgery	
Equine Medicine and Surgery	Poultry Health and Production
Veterinary Reproduction	
Diagnostic Imaging	
Clinical Pathology	Anaesthesiology
Diagnostic Pathology	
Professional Life	

### Proposed new macro-curriculum 5th year

HEALTH AND PRODUCTION	ELECTIVE DIDACTIC
FIRST SEMESTER	SECOND SEMESTER
Veterinary Public Health	Research Methodology and a short project
Veterinary Practice Management	
Tropical Animal Health	Proposed electives
Veterinary Epidemiology	1. Small Animal and Exotic Practice 2. Equine Practice 3. Production Animal and Wildlife Practice 4. Veterinary Public Health and State Veterinary Practice
Bovine Health and Production	
Small Stock Health and Production	

### Proposed new macro-curriculum 6th year

EXPERIENTIAL TRAINING	
FIRST 8 MONTHS	LAST 4 MONTHS
CORE CLINICS	ELECTIVE CLINICS

### General Experiential rotations

24w

- Production Animal Block (6 x 2w)
  - Herd Health including pigs
  - Production Animal Medicine and Surgery
  - Reproduction
- Veterinary Public Health (1 x 2w)
- Veterinary Public Health & Poultry (1 x 2w)
- Vet Trop Dis/ Clin Path /Pharm/Tox (1 x 1w)
- Community Clinic (1 x 2w)
- Pathology (2 x 2w)
- State Veterinary Practice (1w)

24w

- Anaesthesiology (1x2w)
- Equine Clinic (2 x 2w)
- Outpatients (2 x 2w)
- Ophthalmology/Dentistry & Radiology (1 x 2w)
- Small Animal Surgery (2 x 2w)
- Small Animal Medicine (2 x 2w)
- Holiday clinics (December) (1w)
- Private practice/electives (3w)

### Veterinary Academic Hospital

- 9 Clinics
- 32 392 patients per annum
- 5779 referral cases



## Community Clinics

- Hluvukani Clinic



- Mamelodi Clinic



## Veterinary nurses programme

- Currently 2 y diploma programme consisting of 1.5 y didactic teaching and 0.5 y experiential training
- Converting to a 3 y degree programme (BVN) that will consist of 2 y didactic teaching and 1 y of experiential training
- Veterinary nurses always function clinically under the control of a veterinarian

## Current Admission Policy

- Students are submitted into BSs (Vet Biol) same as for all BSc biology and science programmes based

	Two Languages	Mathematics	Life Orientation	Physical Science	2 Other subjects
APS 30	Comply with NSC minimum requirements: additionally one of these languages must English OR Afrikaans at level 4 (50-59%)	4 (50 - 59 %)	4 (50-59 %) (Excluded when calculating the APS)	4 (50 - 59 %)	Any two subjects at level 4

- Selected and admitted into veterinary programme after completion of BSc (Vet Biol) II based on academic performance and population demographics

## Current admission policy into Veterinary programme

- Total of 135 students are admitted annually
- Majority of students (n=95) are selected after completion of their 2nd year BSc (Vet Biol)
- The remaining four categories are:
  - Foreign candidates and who are completing the prescribed BSc (Vet Biol) 2nd year modules (n=10)
  - Candidates in possession of a related BSc and/or PG degree who have completed all required BSc (Vet Biol) 2nd year modules (n=20)
  - Candidates in possession of a related BSc and/or PG degree who still need to complete some BSc (Vet Biol) 2nd year modules (n=5)
  - Students repeating BSc (Vet Biol) III (n=5).

## New proposed Admission Policy

- Selection and admitted to veterinary training from school and from university
- Admissions test
- Psychometric testing
- Academic performance
- Interviews



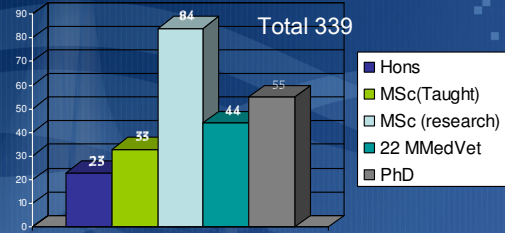
## Veterinary Nursing: DipVetNurs

- Admission (minimum requirements)
  - National Senior Certificate (NSC)

APS	Languages	Mathematics	Life Orientation	Physical Science	Two other
22	Comply with NSC minimum requirements: One of these languages must be English at level 4 (50-59%). The second language at level 3	4 (50-59%)	4 (50-59%) (Excluded when calculating the APS)	4 (50-59%)	One of these must be Life Sciences at level 4 and the other subject at level 3

APS is calculated by adding the scores obtained in 6 recognised 20-credit subjects

## Post graduate programmes



Degree	Programmes	Duration
BVSc (Hons)	Combination of 3-4 modules	2 - 3 y
MMedVet*	Anaesthesiology; Bovine Medicine; Cattle Herd Health; Clinical Laboratory Diagnostics; Diagnostic Imaging; Equine Medicine; Equine Surgery; Laboratory Animal Science; Ophthalmology; Pathology; Pharmacology; Pig Herd Health; Poultry Diseases; Small Animal Medicine; Small Animal Surgery; Small Stock Herd Health; Reproduction; Toxicology; Veterinary Ethology; Veterinary Public Health; Wildlife Diseases	4 - 6 y
Taught Masters**	Veterinary Industrial Pharmacology; Veterinary Tropical Diseases	1 - 2 y
Research Masters***	Anatomy and Physiology; Companion Animal Studies; Paraclinical Sciences; Production Animal Studies; Veterinary Tropical Diseases	1 - 2 y
PhD	Anatomy and Physiology; Companion Animal Studies; Paraclinical Sciences; Production Animal Studies; Veterinary Tropical Diseases	3 - 5 y

### Research Focus Areas

- Phyto- and Ethnoveterinary medicines
- Molecular studies on parasitic diseases
- Anatomical and Physiologic al studies
- Wildlife and Environmental studies
- Equine and Companion animal health and Welfare
- Veterinary aspects of food safety and food security

## Collaboration and Alliances



- MOUs (USA, Scandinavia, Europe, S&E Africa)

- Strategic alliances (NRF, OVI, OBP, ITM, DGIC, Wellcome trust, CIRAD, EU, Flanders)



## Quality assurance

- Internal QA systems through EI staff, peer review and student evaluation
- External examiners for all modules
- SAVC visitation and monitoring
- UP departmental self-evaluation programme
- External evaluation of training and research programmes
- Participation in global accreditation initiatives
- Laboratory QA programmes

## Recommendations

- Strengthen current deans meeting
- Implementation of a core – elective approach for veterinary training
- Development of Day-One competencies required for each country to represent core programme
- Consider an accreditation system for veterinary programmes within region
- Special training and research programme should be subject to external evaluation