BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

DEPARTMENT OF ANIMAL SCIENCE

REGULATIONS FOR THE BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL HEALTH AND PRODUCTION EXTENSION (BScHAHPE)

1. PREAMBLE

These regulations should be read in conjunction with the General Academic Regulations for undergraduate degrees of Bindura University of Science Education hereinafter referred to as the 'General regulations'.

2. AIMS

The degree seeks to empower Veterinary Paraprofessionals (VPPs) involved in animal health and production with the requisite extension skills to enable them to cater for the increasing proportion of the small scale producer who historically relied on Government support for animal health, welfare and production services

Under the rules of the Council of Veterinary Surgeons of Zimbabwe (CVSZ)- The Veterinary Statutory Body in Zimbabwe, Animal Health and Production Extension graduates are regarded as VPPs who can be registered to provide clinical services to farmers and regulatory services on behalf of the government within a specific geographical area.

In order for a VPP to be registered to carry out these specific activities, the Veterinary Statutory Body requires demonstration of specific competencies acquired through formal training at an accredited training institution. On completion of the programme, students are expected to:

- Carry out veterinary clinical services e.g., reproduction related activities, basic treatment, internal external parasite control, preventive vaccination, sampling, dehorning, castration and other production related interventions, and disease control;

- Perform regulatory services e.g., epidemiologic surveillance including interviews and sero-surveillance, disease investigation and sampling, reporting, vaccination and meat

inspection to assist the country in its effort to achieve food self-sufficiency in the production of safe livestock products;

- Assessment of risk areas/situations, planning, cold chain management, critical controls, monitoring;
- Communicate, feedback and reporting with stakeholders;
- Build awareness and enforcement of animal welfare standards;
- Carry out routine outreach and veterinary extension services and contribute to the development of practical extension network for the livestock health and production sector;
- Improve the quality of life through livestock production and disease surveillance; and
- Mentoring, in-service training and supervision of junior staff and subordinates implementing sanitary measures including biosecurity.

3. LEARNING OUTCOMES

- Demonstrate an understanding of animal health factors affecting the livestock industry in Zimbabwe, in the SADC region and internationally;
- Provide innovative solutions for addressing animal health and production challenges;
- Demonstrate an understanding of various approaches to address animal health and welfare challenges in the livestock industry;
- Demonstrate an understanding of the importance of information dissemination in the livestock health sector;
- Demonstrate competences in best animal health and welfare management practices in livestock production;
- Demonstrate competences in innovation, research and entrepreneurship in animal health, welfare and production;
- Demonstrate competence in information dissemination in the livestock health and production sector;

- Provide innovative solutions for addressing animal health and production challenges; and
- Apply theories and skills of breeding and genetics, nutrition, physiology, health, welfare and management into practical and sustainable animal production.

4. CAREER OPPORTUNITIES

Graduates from this programme can follow careers in government extension services and outside public services including research, consultancy, Livestock breeding (Artificial insemination, ET, estrus synchronization), Non-Governmental Organisations, animal health products suppliers, veterinary drug companies, specialist organizations like poultry farms and commercial farms, banks and entrepreneurship.

5. ENTRY REQUIREMENTS

To be eligible for admission a candidate must have the following:

5.1 Normal Entry

5.1.1 At least five Ordinary Level subjects including English Language, Mathematics and a Science subject at grade C or better.

5.1.2 Advanced Level pass in Biology (any acceptable equivalent), and any other science subject OR a relevant National Certificate.

5.2 Special Entry

5.2.1 At least five Ordinary Level subjects including English Language, and a Science subject at grade C or better.

5.2.2 Higher National Diploma, National Diploma in Animal Health and Production or Agriculture or its equivalent from a recognized Institution.

5.3 Mature Entry

5.3.1 At least five Ordinary Level subjects including English Language, Mathematics, and a Science subject at grade C or better.

5.3.2 At least 25 years of age for males and 23 years of age for females, with at least five years relevant working experience.

6. STRUCTURE OF PROGRAMME

6.1 The Bachelor of Science Honours Degree in Animal Health and Production Extension (BSc HAHPE) programme is a four-years (8 semesters) full-time course with a minimum credit load of 480 hrs and a maximum credit load of 550 hrs. The programme has been accorded ZNQF Level 8.

6.2 The duration of the programme shall be four years. However, candidates who are employed in a relevant field and have a supporting letters from the employer at enrollment will finish studies in three years. The structure of the programme for those on four year studies will be:

Part 1	Semester I	Semester II
Part II	Semester I	Semester II
Part III	Semester I	Semester II
Part IV	Semester I	Semester II

6.2 Industrial attachment shall be in Part III

6.2.1 ~~6.3~~ Candidates on the BLOCK programme and are employed will do their attachment when they go to their places of work in between BLOCKS and will be assessed by industrial supervisor, university assessors in Part 2 after the January and August BLOCK and are expected to write an attachment report which will be marked and graded together with the Part II Semester II exams.

6.3 Practical Animal Health Experience

Practical experience in Animal Health and Production Extension is an important part of the degree programme. The programme has– 37 courses of which only 4 modules are full

theoretical courses, 5 modules are full practical courses with full credits, and 28 modules have practical's embedded in the course.

6.3.1 Compulsory practical's

Nine (9) modules have compulsory practical's embedded in the course and these are: Anatomy and Physiology, Field Biosafety and Biosecurity, Communication, Animal Production Systems, Principles of Disease Control, Pharmacology and Toxicology, Animal Welfare and Ethology, Pathology,- and Parasitology.

6.3.1.1 **Anatomy and Physiology**- Students will learn indicate the position of any organ or part of an organ in the animal body using correct anatomical terminology and to locate the anatomical features relevant to clinical examination, venepuncture, and vaccine and drug administration within species of importance. This will largely be conducted at the FAES laboratory, under the direct tutorship of the lecturer.

6.3.1.2 **Field Biosafety and Biosecurity**- Demonstrate the proper use of personal protective equipment (PPE), the ability to avoid personal injury and reduce disease spread when working with animals and equipment under field conditions and develop a farm biosecurity plan and demonstrate the ability to effectively communicate future risk mitigation practices to the farmer. Students will learn to assess vehicles and other transport equipment with regard to the risk of disease spread and also assess market facilities, equipment, and animals present with regard to the risk of disease spread.

6.3.1.3 **Applications of communications**- Demonstrate the ability to effectively communicate a disease condition or disease outbreak situation to relevant stakeholders both orally and in writing

6.3.1.4 **Animal production**- Students will be exposed to in-house practically at BUSE and will also visit livestock research Stations such Henderson, Matopos and Makoholi research Institutes to gain hands on experience in identifying the types and quality of various feed sources, edible grasses and toxic plants at pasture. Students will be taken to at least 2 farm visits to assess key elements of farming systems.

6.3.1.5 **Pharmacology and Toxicology-** students will get hands on experience in calculating the amount of drug to administer to an animal based on the prescribed dosage, the animal's weight and the concentration of the drug and manage an inventory of drugs and equipment in a manner ensuring proper functioning, safety, and efficacy.

6.3.1.6 **Animal Welfare**- students exposer to large abattoirs such as Colcom, Cold Storage Company (CSC), Irvines, and National Sheep and Goat Company (NASHCo) Abattoir to ~~–~~assess animal transport and slaughter ~~farming and transport~~ systems to determine compliance with animal welfare standards and visits to large scale commercial livestock farms to inspect animal welfare measures and recommend application of measures to minimise fear, pain, stress, and discomfort in line with the five freedoms of animal welfare.

6.3.1.7 **Pathology**- Necropsy and Gross Pathology practical's can be conducted at the university farm, at District and Provincial Veterinary Offices and other large animal and mixed Veterinary Practices (Veterinary Surgeries) including the Society for the Prevention of Cruelty to Animals (SPCA). Students will be exposed to conducting routine field necropsy including identification of gross abnormalities in relevant species, collection, preparation, preservation, and transportation of appropriate specimens and conduct relevant pen-side tests.

6.3.1.8 **Parasitology**- Practicals will be conducted at the FAES Laboratory and where necessary, students can visit other veterinary laboratories such as VC, Irvines, and Provincial Veterinary laboratories. Demonstrate correct control and prevention measures for various internal and external parasites of importance in Zimbabwe including the selection and administration of appropriate antihelmintics. Students will perform basic parasitological diagnostic tests for parasites of importance in Zimbabwe

6.3.1.9 **Principles of disease control**- Applied Epidemiology Practicals will be conducted largely at Provincial Veterinary Offices where students will participate in on-going national disease control programmes, conduct an outbreak investigations, apply the elements of descriptive epidemiology, and develop an investigation report to provide to a veterinarian.

6.3.2 Complete practical courses

Compulsory complete practical modules include Animal Examination, Diagnostic and Therapeutic Techniques; Information Technology Applications; Primary Animal Health Care Techniques; and Industrial Attachment.

6.3.2.1 Animal Examination, Diagnostic and Therapeutic Techniques

This course provides students with the practical skills necessary to effectively restrain and clinically examine animals, obtain diagnostic specimens and administer treatments. The course comprise a number of practical units including (i) Animal handling and restraint; (ii) Conducting a clinical examination- examining the animal's environment in the context of a disease occurrence and identifying and recording physical abnormalities; (iii) Conducting basic diagnostic and therapeutic procedures; (iv) Collecting appropriate specimens for diagnosis; (v) Diagnostic and Therapeutic techniques; and (vi) Proper use and care of all equipment and supplies associated with restraint, examination, sampling and treatment. The course will be conducted mainly at the farms and students are expected to bring the correct attire and protective equipment.

6.3.2.1.1 Students shall produce a report at the end of the course.

6.3.2.1.2 College lecturers shall assess each student during the practical's

6.3.2.1.3 A live practical examination shall be conducted at the end of the course where students demonstrate skills gained.

6.3.2.1.4 The Student's report in 6.3.2.1.1, College Supervisor/Lecturers basement report in 6.3.2.1.2 and the live, hands-on practical examination in 6.3.2.1.3, shall be considered in coming up with the final mark for this course. The weighting of the assessment shall be as follows:

(a)	Live/Hands- on Examination:	50%
(b)	College Supervisor(s)/Lecturers assessment:	20%
(c)	Student Report:	30%

6.3.2.2 Information Technology Applications

This Course covers basic techniques in record keeping, data input, database management and the computer skills necessary to work in the veterinary environment. Students will be required to spend at minimum of 120 hours at either the Central Veterinary Laboratory (CVL), Provincial Veterinary Offices, District Veterinary Offices, or Animal Health Management Centres (AHMCs) where the national Livestock Information Management System (LIMS) databases, computers, data forms, and data capture is being conducted. Students are expected to acquire hands on experience in use of basic computer and information technology applications to input data and manage databases in a field or laboratory setting, complete specific forms of importance accurately, and submit to relevant authorities, utilise information technology applications for data collection and data entry, apply relevant applications to retrieve, organise, and present data, and demonstrate the ability to organise and present the retrieved data into reports.

6.3.2.2.1 Students shall produce a report at the end of the course.

6.3.2.2.2 College lecturers shall visit students or conduct online assessment during the course.

6.3.2.2.3 There shall be line supervisors at places of student attachment who shall assess each student's progress.

6.3.2.2.4 The reports in 6.3.2.2.1, 6.3.2.2.2 and 6.3.2.2.3, shall be considered in coming up with the final mark for Industrial Attachment. The weighting of the assessment shall be as follows:

(a)	Line Supervisor(s):	50%
(b)	College Supervisor(s)/Lecturers:	20%
(c)	Student Report:	30%

6.3.2.3 Primary Animal Health Care Techniques

This course covers basic animal production interventions and good management practices undertaken on a routine basis to maintain animal

health and production. Students will be attached either to the Society for the Prevention of Cruelty to Animals (SPCA), Private Veterinary Large Animal Practices, Veterinary Teaching Hospitals, approved large scale beef and or dairy farms, and or Research Institutions where they will perform first aid, wound care, bandaging, care of debilitated animals, and perform other common husbandry procedures and also conduct routine procedures such as preparation and management of surgical and other instruments, perform pre- and post-operative care, and administer medication.

6.3.2.3.1 Students shall produce a report at the end of the course.

6.3.2.3.2 College lecturers shall visit students or conduct online assessment during the course.

6.3.2.3.3 There shall be line supervisors at places of student attachment who shall assess each student's progress.

6.3.2.3.4 The reports in 6.3.2.3.1, 6.3.2.3.2 and 6.3.2.3.3, shall be considered in coming up with the final mark for Industrial Attachment. The weighting of the assessment shall be as follows:

(a)	Line Supervisor(s):	50%
(b)	College Supervisor(s)/Lecturers:	20%
(c)	Student Report:	30%

6.3.2.4 Industrial Attachment (AGP 301)

Students shall be attached to a relevant organization/institution for at least eight (8) months. Industrial Attachment shall be done in Part III. Students on the Block Release programme shall be expected to carryout attachment during the period they are off campus in the first and second year.

6.3.2.4.1 Students shall produce a report at the end of their attachment.

6.3.2.4.2 College lecturers shall normally visit students in the year for assessment.

6.3.2.4.3 There shall be line supervisors at places of Industrial attachment who shall assess each student's progress.

6.3.2.4.4 The reports in 6.3.2.4.1, 6.3.2.4.2 and 6.3.2.4.3, shall be considered in coming up with the final mark for Industrial Attachment. The weighting of the assessment shall be as follows:

(a)	Line Supervisor(s):	50%
(b)	College Supervisor(s)/Lecturers:	20%
(c)	Student Report:	30%

6.4 REGISTRATION

6.4.1 No candidate may register for a course unless he/she has passed all the prerequisites for that course before the beginning of the semester in which the course is being offered.

6.4.2 The departmental board shall sanction the combination of courses that a student may choose to do in a given semester.

6.5 SCHEME OF EXAMINATION

6.5.1 There shall be a set of formal examinations at the end of each semester.

6.5.2 Where a practical examination is not included in a course, evaluations shall be based on course work assessment and formal examinations course work shall account for 30 % and the formal examination shall account for 70 % of the overall assessment.

6.5.3 The examiners may, at their discretion, require any candidate to present himself/herself for an oral examination or written test.

6.5.4 The assessment of a research project shall be based on a dissertation submitted at a date determined by the departmental board. Students may be required to present a seminar based on their project, or attend an oral examination based on the project.

7. DETERMINATION OF RESULTS

7.1 For each practical course, field course or project course and for each student the departmental panel of Examiners shall determine a final mark and whether that student has passed or failed that course.

7.2 The final mark shall be based on the observation of student's performance in the laboratory, classroom or in the field and the assessment of the written report or the dissertation.

7.3 For any other course, the Departmental Board of Examiners shall determine, for each student a course work assessment mark, a formal examination mark, a final mark and whether the student has passed or failed that course.

7.4 The departmental board shall submit, for each course under its control and each student enrolled in that course, the final mark and the result to the Faculty Board of Examiners.

8. AWARDING AND CLASSIFICATION OF DEGREE

8.1 To be eligible for the award of a Bachelor of Science Honours in Animal Health and Production Extension, a candidate must have:

8.1.1 Passed all core courses in the programme.

8.1.2. Accumulated a minimum of 480 credits.

8.2 The following grading shall be adopted for all courses:

Class 1	:	75-100 %
Class 2.1	:	65-74 %
Class 2.2	:	60-64 %
Pass	:	50-59 %
Fail	:	Less than 50 %

8.3 Each degree shall be classified using results of Part I, Part II, Part III and Part IV. The weighting shall be as follows:

Part I	10 %
Part II	30 %
Part III	20 %
Part IV	40 %

8.4 In each part, except part III, marks for the ten courses in which the student has obtained the highest score, including marks for all the core courses, will be used to classify the student's degree.

8.5 Results shall be published in accordance with the provisions of the Regulations.

9. COURSES

PART I

SEMESTER I

Course Code	Course Title	Core modules	Pre-requisites	Credits
AG121	Introduction to Biochemistry	y		12
AG122	Introduction to Genetics	y		12
HS 102	Health Education	Y		12
PC 108	Citizenship Education and Conflict Transformation	Y		12
PC150	Communication and Academic Writing Skills	Y		12
AG 130	Introduction to Agricultural Extension	Y		12
AG 101	Introduction to Agricultural Economics			12
AG 104	Introduction to Agricultural Education and Extension			
NR122	Introduction to Statistics	Y		12

SEMESTER 11

Course Code	Course Title	Core modules	Pre-requisites	Credits
AG120	Anatomy and Physiology of Farm Animals	y		12
AGA 108	Animal Examination, Diagnostic and Therapeutic Techniques	y		12
AGA 109	Microbiology	y		12
AGA 107	Immunology	y		12
AGA 110	Parasitology	y		12
AGA 224	Pathology	y		12
AGA 111	Animal Welfare and ethology	y		12
AGA120	Animal Production Systems			12
NR125	Plant Biology			12

PART II

SEMESTER 1

Course Code	Course Title	Core modules	Pre-requisites	Credits
AGA209	Nutritional Biochemistry	y		12
AGA221	Animal Breeding and Reproductive Technologies	y		12
NR221	Statistical Methods and Experimental Designs	y		12
AGA230	Applied Animal Physiology	y		12
CS130	Information Technology and Computer Applications	y		12
AGA 223	Field Biosafety and Biosecurity	y		12
AGA213	Innovations in Animal Health and Production			12
AG201	Principles of Agricultural Marketing			12

SEMESTER 11

Course Code	Course Title	Core modules	Pre-requisites	Credits
AGA 225	Animal Diseases	y		12
AGA226	Pharmacology and Toxicology	y		12
AGA 227	Primary Animal Health Care techniques	y		12
AGA 228	Principles of disease control	y		12
AGA212	Veterinary Epidemiology	y		12
AGA 216	Principles of animal health and production			
AGE250	Agricultural Extension and communication	Y	AG 104	
AGM215	Farm Management and Agribusiness			
AGM223	Agribusiness and Entrepreneurship			12

PART III

SMESTER 1 & 11

Course Code	Course Title	Core modules	Pre-requisites	Credits
AGP 301	Industrial Attachment	y		120

PART IV

SEMESTER 1

Course Code	Course Title	Core modules	Pre-requisites	Credits
AGA425	Beef, Goat and Sheep Production	y		12
AGA420	Dairy Production and Technology	y		12
AGA427	Pig and Poultry Production	y		12
AGM216	Project Management and Evaluation			12
AGA407	Livestock Improvement	y		
AGA429	Animal Products and Processing			
AG420	Research Project	√		24

Course Code	Course Title	Core modules	Pre-requisites	Credits
AGA430	Feed Technology	y		12
AGA 428	Animal Biotechnology	y		12
AGA 422	Food Hygiene	y		12
AGE401	Management of Extension Programmes		AG 207	12
AGA 423	Professional jurisprudence and ethics	y		12
BS441	Entrepreneurship Theory and Practice			12
AGA435	Land use planning			12
AGA430	Feed Technology			12
AG403	Agricultural marketing			12

ESW430	Intensive Wildlife Production Systems			12