KISII NATIONAL POLYTECHNIC

DEPARTMENT OF AGRICULTURE, LIVESTOCK & ENVIRONMENTAL SCIENCES

CURRICULUM FOR CERTIFICATE IN ANIMAL HEALTH AND PRODUCTION (CERT ANHP)

JULY 2020

1.0 The Curriculum

1.1 Title: Certificate in Animal Health and Production

1.2 Philosophy of the programme

The programme has been innovatively tailored to synergize achievement of the big four agenda pillar of food security whose main driver is agriculture. Agriculture touches on the other three pillars of the Big Four. This will catalyze poverty reduction through acquisition of education and skills in Animal health technology, dissemination of the knowledge to enhance improved animal health, welfare and production. Investment on this course will ensure that the inequality gap is bridged. For these reasons, implementation of this course is the surest way out of poverty for the 70% poor rural households which form the majority of the population.

The graduates from Certificate Course in Animal Health and Production (CANHP) will be trained to provide hands-on care to a variety of animals both large and small. The program will use an accredited curriculum by Kenya Veterinary Board (KVB) delivered by competent staff in Animal Health training.

1.3 Rationale

Certificate in Animal Health and Production is a professional certificate programme designed to be in line with KVB and Technical and Vocational Education and Training (TVET/CDACC) to train animal health/veterinary technicians with adequate theoretical, practical, technological knowledge and skills in the treatment and control of animal diseases. The students' outlook on agricultural and livestock industries is broadened by the inclusion of support courses. Students undertake field/industrial attachment at the end of their second year for a period of 10 weeks. Since its inception in 1972, Kisii National Polytechnic (KNP) has continuously trained competent graduates in the seventy four (74) programs which are categorized under Artisan, Certificate, Diploma and Higher Diploma levels where Diploma in agriculture is among. It occupies 16.95 hectares of land, land that can support the activities of the new program.

The Certificate in Animal Health programme is in response to the increasing demand of veterinarians to address animal health issues in Kenya. According to the Kenya National Bureau of Statistics (2018), Kenya is a net food importer with one out of three Kenyans suffering from food insecurity and over half of the country's poor spending 50 to 70 per cent of their total income on food. Even in rural

areas, 57 per cent of food consumed is purchased. Almost 30 per cent of the children in the country face stunted growth. A healthy population will also have a positive ripple effect on the economy. Investment in agriculture will also ensure households are food sufficient and the savings could be used to educate children or invest in better housing. The surplus food can also be sold, thus providing a source of income.

Agriculture touches on the other three pillars of the Big Four since over 70 per cent of the rural poor depend on it for their livelihoods; proper investment in the sector will ensure that the inequality gap is bridged. For these reasons, the sector should top as it is the surest way out of poverty for poor rural households which form the majority of the population.

While livestock contributes less than 20% to agriculture GDP, it plays an important economic and socio-cultural role among many Kenyan communities, particularly the northern ASALs that have >60% of Kenya's beef cattle population. However, much of the cattle in the Kenyan Rural areas do not meet the 350 kg minimum market weight. Additionally, they tend to be very vulnerable to disease, drought and theft. Livestock includes beef and dairy cattle, sheep and goats, camels, poultry and pigs. Produce from livestock comes predominately from milk (i.e., dairy), but the fastest-growing sub-sector is meat, which has almost doubled in the period 2012-2014.

The contribution from the livestock sector to the total Gross Domestic Product is only 10% (Republic of Kenya, 2002). This puts a high demand on livestock production, which has resulted to major changes in animal production systems, tending towards intensification. These changes are posing new challenges in animal disease management requiring an understanding in veterinary science. In the last three decades the effectiveness of animal health services delivery has seriously declined in developing countries, especially in Africa. This could be attributed to high cost of inputs and veterinary services, emerging livestock diseases due to climate change and shortage of veterinarians to mitigate food security. The general trend in services delivery in Kenya is towards privatization of veterinary practice. There is therefore a need to train more animal health professionals equipped to meet challenges in the detection and control of endemic and emerging animal diseases. Kenya's economic growth is anchored on the four pillars of the Big four Agenda which are universal health care, food security, Manufacturing and Affordable housing. Kisii National Polytechnic is strategizing to make direct contributions to Agriculture which contributes 51 per cent of Kenya's Gross Domestic Product (GDP) specifically providing competitive quality training in animal health and artificial insemination and research for sustainable livestock through this veterinary programme. KNP is endowed with qualified academic

staff and ample teaching facilities including a demonstration and commercial farm, diagnostic and research laboratories, as well as very strong networks and collaborations. This makes KNP very strategically positioned to deliver this course.

1.4 Goal of the Programme

To develop highly qualified, globally competitive and innovative human resource in Animal Health Certificate Course capable of promoting farm livestock productivity, raise incomes levels and improve access to formal & self-employment opportunities in the sector.

1.5 Programme Learning Outcomes

At the end of the programme, the students are expected:

i. To be able to diagnose and control animal diseases in order to enhance health of animals, human and environment.

ii. To be able to educate and promote extension and outreach services to farmers on proper and quality animal husbandry practices and apply ethical and legal principles in the treatment of the animals.

iii. To contribute to economic development and improvement of the animal industry and promote the ideals of animal welfare.

iv. To be able to carry home care instruction and Nutritional counseling to farmers

1.6 Mode of Delivery

This is a full-time with hands-on (practical) work, and will also integrate blended learning which will include the following:

- Lectures
- Field & Lab Practicals
- Project, Seminars & Research
- Clinical Visits
- Model Farm Visits

1.7 Academic Regulations for the Programme

1.7.1 Admission Requirements

a. Admission requirement into the programme shall be based on KVB admission requirements

b. The trainees should have completed Kenya Certificate of Secondary School Education (KSCE) with an average mean grade of C minus (C-) and minimum of a C- in Biology or Biological Sciences or equivalent as determined by the KVB.

c. A minimum of one-year certificate with a credit pass in Range Management/Wildlife Health/Dairy Technology/Animal Science/Animal Husbandry/Leather Technology/Agriculture or equivalent with at least an aggregate of D+ at KCSE or equivalent as determined by the KVB.

1.7.2 Duration of the Course

The course is designed to have a duration of two years covering **1,860** total hours which includes **270** hours of field attachment.

1.7.3 Regulation on Credit Transfer in a programme

No credit transfer for this programme

1.7.4 Course Requirements

ISO procedure for teaching will be followed in teaching of all courses in the programme.

1.7.5 Student Assessment Policy/ Criteria

The examinations will be done for each taught course as per KNP statutes

1.7.6 Grading System

The grading of examination for this programme shall be conducted in accordance with Kisii National Polytechnic Policy. However the pass mark shall be 40% for each course.

100-75 per cent A (Distinction)

74-60 per cent B (Credit)

59-40 per cent C (Pass)

39-0 per cent D (Fail)

1.7.7 Examination Regulations

- All examinations for the Certificate in Animal Health programme will be conducted in accordance with examination regulations as stipulated in ISO of KNP on Rules and Regulations for the Diploma Programme.
    i. No candidate shall be permitted to proceed to the next year of study until he /she has passed in all the prescribed courses taught in that year.
    ii. A candidate who fails an end-of-semester/year examination shall be required to do a supplementary examination(s)/resit(s) on the failed course(s) as stipulated in the KNP Academic policy.
- Assessment criteria and procedures for regular examinations

(a) Examinations shall be graded on the basis of percentage marks consisting of thirty per cent (30%) as continuous assessment and seventy per cent (70%) as final examinations

- The duration of the final examinations shall be as follows:
    i. A course having three credit hours or less shall be examined by a paper of two hours only.
    ii. A course having more than three credit hours shall be examined by a paper of 3 hours only. One credit hour = 15 hours (Both practical and theory)

1.7.8 Minimum Academic Staff Requirements

At least seven (7) staff with specializations in the following - Basic Science 1; Animal Production 2; Agribusiness & Extension 1; Animal Health 3. At least three of the seven must be registered and retained Veterinary Surgeons. The head of Animal health department or relevant section offering Animal Health course shall be a Veterinary Surgeon. The recommended staff to student ratio is 1:7 and the permanent staff to part-time staff ratio is 3:1.

2.0 COURSE OUTLINE FOR CERTIFICATE IN ANIMAL HEALTH AND PRODUCTION

CODE	UNIT TITLE			
YEAR 1	**SEMESTER 1**	**L**	**P**	**TH**
CENS 100	Biostatistics and Basic Computer Application	30	15	45
CAGR 101	HIV AIDS	15	0	15
CENS 111	Basic Biochemistry	20	10	30
CAGR 112	Entrepreneurship	30	15	45
CANH 113	Basic Anatomy and Physiology	60	30	90
CAGR 114	Soil Science	20	10	30
CANH 115	Basic Parasitology	30	15	45
CAGR 116	Botany and Zoology	45	15	60
CANH 117	Microbiology	30	15	45
	TOTAL	**280**	**125**	**405**
YEAR 1	**SEMESTER 2**	**L**	**P**	**TH**
CENS 121	Ecology	20	10	30
CAGR 122	Farm Structure & Mechanization	30	15	45
CAGR 123	Pasture and Fodder Management and Conservation	45	30	75
CANH 124	Introduction to General Pathology	30	15	45
CANH 125	Introduction to Parasitology	30	15	45
CANP 126	Animal Nutrition	45	30	75
CANH 127	Basic Immunology Vaccines	30	15	45
CANH 128	Basic Animal Genetics and Breeding	30	15	45

CANH 129	Basic Pharmacology & Toxicology	45	15	60
	TOTAL	**305**	**135**	**465**
YEAR 2	**SEMESTER 1**	**L**	**P**	**TH**
CAGR 211	Extension and Communication	30	15	45
CANH 212	Microbial Diseases	30	15	45
CANH 213	Metabolic, Nutritional and Reproductive Diseases	30	15	45
CANH 214	Parasitic Diseases	30	15	45
CAGR 215	Marketing and Value Addition of Animal Products	30	0	30
CANP 216	Livestock Production: Ruminants	45	15	60
CANP 217	Livestock Production: Non-Ruminants	45	15	60
CANP 218	Companion and Draught Animals	30	15	45
CAGR 219	Introduction to Apiculture and Aquaculture	30	15	45
	TOTAL	**300**	**120**	**420**
YEAR 2	**SEMESTER 2**	**L**	**P**	**TH**
CANH 221	Animal Health and Field Training	30	15	45
CANH 223	Animal Health Applied Skills	0	45	45
CANH 224	Introduction to Epidemiology	45	0	45
CANH 225	Zoonoses and one Health concept	30	15	45
CANH 226	Animal Welfare, Ethics and Law	30	15	45
CAGR 227	Rural Sociology	30	0	30
CAGR 228	Agribusiness	30	15	45
	TOTAL	**195**	**105**	**300**

CANH 229	Field Attachment	0	270	270
GRAND TOTAL		**1080**	**755**	**1860**

3.0 EXAMINATION TIMELINES

COURSES CODE	COURSES TITLE	DURATION PER EXAM
CENS 111	Basic Biochemistry	2 Hours
CAGR 112	Entrepreneurship	2 Hours
CANH 113	Basic Anatomy and Physiology	3 Hours
CENS 100	Biostatistics and Basic Computer Application	2 Hours
CAGR 114	Soil Science	2 Hours
CANH 115	Basic Parasitology	2 Hours
CAGR 116	Botany and Zoology	2 Hours
CANH 117	Microbiology	2 Hours
CAGR 101	HIV AIDS	1 Hours
CENS 121	Ecology	2 Hours
CAGR 122	Farm Structure & Mechanization	2 Hours
CAGR 123	Pasture and Fodder Management and Conservation	2 Hours
CANH 124	Introduction to General Pathology	2 Hours
CANH 125	Introduction to Parasitology	2 Hours
CANP 126	Animal Nutrition	3 Hours
CANH 127	Basic Immunology Vaccines	2 Hours
CANH 128	Basic Animal Genetics and Breeding	2 Hours
CANH 129	Basic Pharmacology & Toxicology	2 Hours
CAGR 211	Extension and Communication	2 Hours
CANH 212	Microbial Diseases	2 Hours
CANH 213	Metabolic, Nutritional and Reproductive Diseases	2 Hours
CANH 214	Parasitic Diseases	2 Hours

CAGR 215	Marketing and Value Addition of Animal Products	2 Hours
CANP 216	Livestock Production: Ruminants	2 Hours
CANP 217	Livestock Production: Non-Ruminants	2 Hours
CANP 218	Comparison and Draught Animals	2 Hours
CAGR 219	Introduction to Apiculture and Aquaculture	2 Hours
CANH 221	Animal Health and Field Training	2 Hours
CANH 223	Animal Health Applied Skills	Practical Exam
CANH 224	Introduction to Epidemiology	2 Hours
CANH 225	Zoonoses and one Health concept	2 Hours
CANH 226	Animal Welfare, Ethics and Law	2 Hours
CAGR 227	Rural Sociology	2 Hours
CAGR 228	Agribusiness	2 Hours
CANH 229	Field Attachment	Report

4.0 COURSE DESCRIPTIONS

CAGR 227: RURAL SOCIOLOGY

Course content should provide the trainee with principles of Rural Sociology. Introduction to rural sociology: definition; branches of sociology; social interactions; social stratification. Social institutions. Sources of knowledge; culture; collective behaviour; the public and public opinion; gender and gender discrimination. The community. Kenya's population size and structure. Focus should be on social dynamics in the rural areas.

CAGR 101: HIV/AIDS

Course content should provide the trainee with knowledge on HIV AIDS and STIs. Introduction: Definition of HIV and AIDS, Background information on HIV and AIDS, Epidemiology of HIV and AIDs; global prevalence; national prevalence; Modes of transmission of HIV. Predisposing factors of HIV infection. Phases of HIV infection. Human sexuality: reasons why men and women engage in sex; definition of irresponsible sex; consequences of irresponsible sex; sexual myths, beliefs and attitudes. List of the common STIs; Relationship between HIV and AIDS and other STIs; importance

of treatment of STIs in the control of HIV and AIDS; Strategies for Prevention, Control and Management of HIV/AIDS and other STIs. Emphasis should be on need for behavioral change.

CENS 100: **BIOSTATISTICS AND BASIC COMPUTER**

Course content should provide the trainee with a general understanding of fundamental principles of biostatistics and computer applications. Introduction to basic Biostatistics. Survey of data and data types. Concepts of statistical population and samples. Descriptive statistics. Definitions of common terms used in computing, elements of a composer system, parts of a computer, managing computer connections. Operating systems: MS windows, Application software: Word processor, Spreadsheets, Databases, PowerPoint presentations, email and internet. The trainee should be able to use appropriate paper-based and/or electronic means for the proper and systematic collection, recording, storage, retrieval, management, and reporting of relevant information for Animal Health and Production.

CAGR 114: BASIC SOIL SCIENCE

Course content should provide the trainee with knowledge on the importance of soils in animal production and health. Soil Origin: Definition of soil; soil formation- broad categories of soil forming rocks; weathering; factors that influence soil formation; process of horizon development; soil profile; Soil sampling. Physical Properties of Soil: texture; structure; consistence; porosity; air; water; colour. Soil Organisms. Soil Organic Matter; Organic matter cycle; Humus. Chemical Properties of Soil: Soil pH and Liming; Mineralogical Properties of Soil; Essential mineral elements; Soil Fertility – Organic and Inorganic Manures; Organic farming. Emphasis should be on the effect of soil quality on pasture and fodder production.

CAGR 116: BASIC BOTANY AND ZOOLOGY

Course content should provide the trainee with the basic principles in Botany and Zoology. Define Botany and Zoology state the importance of Botany and Zoology. Cytology: Definition; Animal and plants cells - Parts of the cell and their functions; Prokaryotic and Eukaryotic cells; Cell division - mitosis and meiosis; Levels of organisms' organization - Cells; Tissues; Organs and Organ systems. Plant morphology: Root System; Types of roots; Parts of roots; Root modifications. Stem: Stem parts; Stem Modifications. Structure of typical leaf. Flowers: Parts of a typical flower; Types of inflorescence. Fruits and seeds: Formation; Classification; Seed dispersal. Taxonomy: Introduction; definition; classification; Hierarchal groupings in animals and plants; Binomial nomenclature in animals and

plants; Characteristics of phyla of agricultural and veterinary importance. Germination and early growth. Focus is on fundamentals of plant and animal science.

CENS 111: BASIC BIOCHEMISTRY

Course content should provide the trainee with a general understanding of biochemistry. Definition and importance of Biochemistry. Organic chemistry: Definition; Functional groups of organic compounds; Introduction to functional groups of organic compounds: Hydrocarbons- amines, alcohols and carboxylic acids. Classification and roles in metabolism of: Carbohydrates, Lipids, Proteins, Enzymes, Vitamins, and Minerals. Introduction to Molecular Biology. Definition; Components; Structure of DNA; DNA replication; Types and functions of RNA. Course content should be augmented with laboratory practicals.

CANH 113: BASIC ANATOMY AND PHYSIOLOGY

Course content should provide the trainee with a broad understanding of the anatomy and physiology of major systems within animal species. Introduction: Terminologies; Branches of Anatomy; Histology of epithelia; Types of tissues. Osteology: Gross structure, classification, identification and function of bones and joint. Myology: General classification, identification and function. Skin: Structure, function including the mammary glands. Respiratory system: Gross anatomy, histology and function of the lungs. Circulatory system: Structure and function. Female reproductive system: Anatomy and Physiology. Male reproductive system: Anatomy and Physiology. Urinary system: Anatomy and Physiology. Digestive system: Anatomy and physiology of ruminant and non-ruminant including camels and donkeys. Nervous system: Anatomy and Physiology. Endocrine system: Anatomy and Physiology. Gross anatomy of the domestic fowl, structure and function – respiratory, digestive and reproductive system. This course should ensure the anatomy and physiology of all major species of veterinary importance are covered.

CANH 115: BASIC PARASITOLOGY

Course content should provide the trainee with a general understanding of the morphology and lifecycles of animal parasites; aspects of host/ parasite relationships; importance of zoonotic parasitic infections/ infestations; and principles of and protocols for diagnosing, treating, and controlling parasitic infections/infestations. General parasitology: Parasitism; parasitic relationship; adaptation of parasites; classification- external, internal. Protozoa: Morphology. Athropoda: Identification; life cycle;

importance as vectors of diseases; principles of control. Acarina: Classification of ticks; important ticks of East Africa. Mites, Fleas, and flies. Helminths: nematodes; trematodes; cestodes; morphology; life cycle; effects on the host; diagnosis; control; treatment. Ecto and endo-parasite management and control. Focus should be on parasites impacting the health and welfare of animal species.

CANH 117: BASIC MICROBIOLOGY

Course content should be augmented with appropriate laboratory experience and provide the trainee with a general understanding of basic microbiological principles. Introduction to microbiology. Microscopes: types, magnification, uses and limitations. Micro-organisms, geographical distribution of micro-organisms, virulence, resistance and their economic importance. Classification, characteristics including growth & morphology and importance of: Bacteria, Rickettsia, Chlamydia, Mycoplasma and Fungi. Viruses: Classification, characteristics, infectious nature, reservoirs, survival/existence outside the body. Focus should be on general basic principles, with emphasis on pathogens impacting animal and public health and reportable disease agents.

CAGR 122: FARM STRUCTURES AND MECHANIZATION

Course content should provide the trainee with a general understanding of animal farm structures for restraining, housing and routine management of animals and equipment. Introduction: definition of farm mechanization and farm structures, importance of farm mechanization and constraints of farm mechanization. Sources of farm power: types, advantages and disadvantages. Farm Machinery; servicing and maintenance of farm tractor; the storage requirement for farm machinery/equipment and function of various parts of knapsack sprayer. Farm Structures: Farm plans, layout and design, Construction materials. Farm Water Supply: sources and harvesting methods, distribution (canals, pumping and piping) and storage system. Soil and water Conservation. Practicals: identification of farm machinery/equipment; crush design; soil and water conservation methods; parts of the knapsack sprayer; tools and equipment used in wire fencing. Focus should be on siting and construction of basic farm structures, and general maintenance of machinery.

CENS 121: ECOLOGY

Course content should provide the trainee with knowledge on interaction of animals and their environment. Introduction: Definition of ecology; Definition of terms used in ecology; Community; Associations between organisms; Adaptation of plants and animals to dry lands. Energy and nutrient

flow: Producers, Consumers and Decomposers; Food-chains and Food webs; Ecological Pyramids. Ecosystem: Components of the ecosystem; the ecosystem concept; Flow of energy through the ecosystem; Cycling of materials in an ecosystem; production. Plant ecology: Growth forms; Classification of plant communities; The concept of eco- climatic zones; Characteristics of mountain, tropical rain forest, and savanna grassland plant communities; Development of plant communities; Seral, sub-climax and climax communities and their production; Vegetation retrogression. Application of principles of ecosystem in the environment- destructive and beneficial activities of both man and animals. Effect of climate change on ecology. Emphasis should be on the importance of environmental conservation and climate change mitigation.

CAGR 123: PASTURE & FODDER PRODUCTION AND CONSERVATION

Course content should provide the trainee with an understanding of the principles of pasture, fodder production and conservation. Introduction: Pastures and leys – definition, classification, common pasture plants, desirable qualities, and ecological distribution. Pasture Establishment; use of pastures in soil conservation, soil fertility and disease / pest control. Improvement of Natural Pastures. Pasture Management & Utilization. Fodder establishment and managements: Fodder; Agroforestry. Concept of Seasonal Fluctuation in Pasture Production. Conservation of Pasture and Fodder**.** Silage and Silage Making; feeding silage. Hay and hay making; Handling and storage of hay; Hay quality; Feeding hay. Emphasis should be on practical demonstration of pasture and fodder production and conservation.

CANP 126: ANIMAL NUTRITION

Course content should provide the trainee with an understanding of general principles of nutritional needs of livestock. Introduction: definition of terminologies used in nutrition; importance of nutrition in animal production; Composition and functions of feed. Classification of feeds; classification of feeds into roughages and concentrates; supplements and concentrates – definition, relationship and examples. Digestion, absorption, utilization and storage of food. Factors affecting feed intake; feed additives; animal feed requirements. Utilization of animal industry by-products; utilization of crops / Agricultural by-products. Principles of ration formulation and forms of feed presentation. Practical: types and forms of feeds; use of Pearson square and visit a feed processing plant.

CANH 124: INTRODUCTION TO GENERAL PATHOLOGY

Course content should be augmented with appropriate laboratory experience and provide the trainee with a broad understanding of general pathological principles. Introduction, importance and branches of pathology. Alterations that occur in tissues as a result of diseases and the associated gross and microscopic lesions. Definition of trauma, pre- disposing factors, etiology, pathogenesis and lesions. Inflammation. Degenerative changes. Proliferative changes - granulation and regeneration. Disturbances of circulation. Miscellaneous lesions. Classification and management of emergencies for purposes of saving life and alleviating pain. The trainee should be able to collect samples for laboratory diagnosis.

CANH 127: BASIC IMMUNOLOGY AND VACCINES

Course content should provide the trainee with fundamental immunological concepts and mechanisms applied to the control and prevention of infectious diseases. Introduction: definition of terminologies. Antigens and antibodies: serological tests. Types of immunity. Defense mechanisms. Vaccines: Commonly used Vaccines in domestic animals, cold chain, storage and accounting. Best practice in vaccine handling. Vaccine schedule and vaccine failure in domestic animals. The trainee should be adequately trained on proper vaccine handling, storage and use.

CANH 128: BASIC ANIMAL GENETICS AND BREEDING

Course content should provide the trainee with a general understanding of basic concepts in animal genetics and breeding. Introduction to genetics in animal production. Qualitative genetics; genetic materials. Mutations and Chromosomal aberrations. Quantitative Genetics.

Tools of Animal Breeding; the theory of selection. Breeding Superior Livestock; basic Breeding Programmes. Growth and development. Prenatal phase of growth and development; Post natal phase of growth and development**;** Compensatory growth. Maturity and body composition. Practical: visit to relevant institutions dealing with livestock breeding. The trainee should be adequately trained on maintenance of breeding records.

CANH 129: BASIC PHARMACOLOGY AND TOXICOLOGY

Course content should provide the trainee with a general understanding of the principles in pharmacology and toxicology. Introduction to pharmacology, therapeutics, pharmacokinetics,

Pharmacodynamics, chemotherapy and pharmacy. Sources and classification of drugs. Routes of drug administration, absorption, distribution, metabolism and excretion. Drugs acting on the various body systems. Drugs used in treatment of common disorders e.g. bloat, ruminal atony/stasis. . Forms, application and dosages of: insecticides, acaricides, pesticides; antiparasitic agents; antinematodals; antitrematodal; antiprotozoal and antihistamines drugs. Drug combinations and Drug interactions. Ethno-veterinary medicine. Antimicrobial and pesticide resistance. Introduction to toxicology. Definition of terminologies. Classes and sources of toxicants. Factors influencing poisoning. Diagnosis and management of poisoning. The trainee should be adequately trained on ethical use of drugs, and the toxic agents of importance to animal species.

CAGR 211: EXTENSION AND COMMUNICATION

Course content will allow the trainee to become proficient in public speaking and critical thinking as well as to use appropriate platforms to prepare reports, develop extension messages, and make public presentations. Extension: Basic concepts of extension: definition; forms of education; principles and purpose of extension; types and organization of Kenya's extension services. Agricultural extension challenges and their solutions. Advantages and disadvantages of various Extension teaching methods. Teaching aids and factors to consider in selecting teaching aids. Psychology of adult learning, the learning and teaching process; ways of learning, teaching objectives in extension education; the diffusion and adoption process: stages of the adoption process; adopter categories within farming communities. Public speaking; definitions and types; types of meetings. Conducting meetings; differences between meetings and discussion groups; advantages/limitations of meetings and discussions; demonstrations: conducting/performing demonstrations; advantages and limitations of method and result demonstration. Agricultural Information Services. Communication: definition; the basic elements of communication; stages of effective communication; barriers to effective communication; communication methods; principles of mass media. Report writing: definition, purpose, types and components of a report. Practical sessions on clinical record & report writing, client communication and public speaking

CANH 212: MICROBIAL DISEASES

Course content should be augmented with appropriate laboratory practical to provide the trainee with a broad understanding of microbial diseases in animals. Introduction to microbial diseases: aetiology, occurrence, clinical signs, morbidity, diagnosis, treatment, prevention and control of major microbial

diseases of economic and public health importance in domestic animals including camels, donkeys, fish, bees, rabbits as well as wild animals. Focus should be on OIE-listed microbial diseases with serious public health and trade implications.

CANH 213: METABOLIC, NUTRITIONAL & REPRODUCTIVE DISEASES

Course content should provide the trainee with a broad understanding of Metabolic, Nutritional Conditions and reproductive diseases. Metabolic disorders: Definitions, causes, clinical signs, diagnosis, treatment and prevention. Nutritional disorders: Minerals and vitamin deficiencies - causes, clinical signs, diagnosis, treatment and prevention.

Reproductive diseases: Definitions of fertility and infertility, measures of fertility. Causes, diagnosis, treatment and control of infertility. Abortion: definition, classification, causes and management. Parturition and care of neonates, importance of colostrum. Neonatal diseases: aetiology, predisposing factors, clinical signs, prevention and treatment. Mastitis: definition, classification, causes, clinical signs, predisposing factors, transmission, morbidity, diagnosis, treatment, prevention and control. Udder hygiene. Teat injuries. Dry cow therapy. Mastitis- Metritis-Agalactia Syndrome: definition, aetiology, clinical signs, diagnosis, differential diagnosis, treatment and control in the sow. Elementary obstetrics: definition, signs, types, causes and management. Emphasis should be on conditions and disorders that affect animal production and reproduction.

CANH 214: PARASITIC DISEASES

Course content should provide the trainee with a broad understanding of parasitic diseases in farm animals including poultry, dogs, cats, fish, bees, donkeys, camels and rabbits. Introduction to parasitic diseases of major economic and public health importance in Eastern Africa including: east coast fever, anaplasmosis, babesiosis, (bovine, equine, and canine) Heartwater, Nairobi Sheep Disease, canine erhlichiosis , sweating sickness, tick paralysis and trypanosomosis.. Aetiology, occurrence, symptomatology, morbidity, mortality diagnosis**,** differential diagnosis, treatment, prevention, control and economic importance of: Cysticercosis, Hydatidosis, Haemonchosis, Oesaphagostomum, Ascarids and nematodes. Emphasis should be on parasitic diseases with serious public health and trade implications.

CANH 215: MARKETING & VALUE ADDITION OF ANIMAL PRODUCTS

Course content should provide the trainee with an understanding of the value addition and market dynamics for the various animal products. Marketing: definitions; role of marketing; marketing concepts; The 4 P's of marketing (marketing mix); market structures: types of market structures; characteristics of agricultural products that affect their marketing; Marketing services and channels: definitions of marketing services and marketing channels; types of marketing services and agricultural marketing channels in Kenya; middlemen: definition; types: agent middlemen and merchant middlemen; role of middlemen in agricultural marketing; agricultural marketing institutions: marketing boards; co-operative movement; International Trade: advantages/importance and limitations; comparative advantage; government control of imports and exports and how they affect the national economy; trading blocs. Value addition of animal products: meat, milk, honey, leather, eggs and animal byproducts. Processing equipment and machines. Products grading, packaging and packaging materials market channels for meat, milk, eggs, wool, leather and honey. Focus should be on the marketing and value addition of various animal products and trainees are expected to visit processing plants.

CANP 216: LIVESTOCK PRODUCTION SYSTEMS: RUMINANTS

Course content should provide the trainee with an understanding of general principles of ruminant production systems. Introduction to Ruminant Production Systems. Dairy cattle management: Size and distribution of dairy cattle in Kenya, economic importance of dairy farming, dairy industry and the constraints of keeping dairy animals. Dairy Breeds; characteristics of a good dairy animal; factors affecting breed choice by the farmer. Production Systems. Feeding and Management of Dairy Cattle. Dairy production records Beef Cattle Management: the size and distribution of beef industry in Kenya, the importance of the local beef industry, opportunities and constraints of keeping beef cattle in Kenya and systems of beef production. Beef cattle breeds and breed choice; common beef breeds in Kenya and their origin; physical characteristics of good beef animal; factors affecting breed choice by the farmer. Management of beef herd. Feedlot system. Drought feeding plan. Beef Cattle production records. Sheep and Goats management: history, size and distribution of the sheep and goat industry in Kenya; economic importance of keeping sheep and goats; constraints / challenges facing the sheep and goat industry in Kenya; terminologies used to describe sheep and goat according to age and sex. Breeds of sheep and goats. Feeding. Management; Housing**;** Health: common sheep /goat diseases and common parasites. Sheep and goats production records. Practical: conformation of dairy and beef

animals breeds of cattle, carcass grading, zero grazing unit, sheep/goat pen. Record keeping in ruminant's production. Climate change adaptation strategies. Focus should be on the basic technical characteristics of the commercial and non-commercial ruminant production systems.

CANP 217: LIVESTOCK PRODUCTION SYSTEMS: NON-RUMINANTS

Course content should provide the trainee with an understanding of general principles of non-ruminant production systems. Introduction to non-ruminant production systems. Poultry Management: definition**;** history and distribution; species and products; economic importance of poultry. Problems facing the poultry industry in the country. Poultry breeds (Chicken) and breeding**;** merits and demerits of the indigenous chicken. Breeding methods; chicken hybrids; chicken sexing. Poultry management systems; housing systems. Stocking rate. Poultry (chicken) nutrition; health; brooding; r**e**aring of the growers; management of the layers; factors that influence egg quality and quantity; broiler production. Economics of poultry production: types of records; gross margin. Practicals**:** routine management. Pig Management: history of pig industry in Kenya and its distribution; economic importance of the pig industry; common terms used in pig production; breeds of pigs; problems affecting the pig industry in Kenya,. Breeding and selection; Nutrition and feeding. Housing; pig management and production: production systems; management of various classes of pigs. Economics of pig production, record keeping Practical: routine practices. Rabbits: history and distribution; terminologies. Economic importance of keeping rabbits; challenges/constrains facing the rabbit industry in Kenya. Rabbit breeds. Breeding: Breed selection, breed improvement, mating systems. Housing and feeding. Management practices in rabbit production. Health and production records. Farmed wildlife: definition, species, regulatory requirements for production. Economic importance. Feeds and products. Trainees should visit a poultry, pig and rabbit farm and a feeds processing plant.

CANH 218: COMPANION AND DRAUGHT ANIMALS

Course content should provide the trainee with an understanding of the management of companion and draught animals. Companion animals with emphasis on dogs and cats: introduction, definition, species and socio-economic importance, housing, breeds, breeding management and feeding. Records and economics of companion animals. Draught animals: introduction, definitions and species. Camels' production: introduction: size, distribution, economic importance and constraints in the camel industry. Breeds and their distribution. Adaptive features, production systems and management of

various categories. Donkey husbandry: adaptive features, reproductive behavior, nutrition and feeding, common diseases and parasites, donkey products, optimizing the utilization of the donkey. Records and economics of draught animals. Focus should be on the well-being of companion and draught animal.

CAGR 219: INTRODUCTION TO APICULTURE AND AQUACULTURE

Course content should provide the trainee with an understanding of the management of bees and fish. Apiculture: Definition, importance and size of the apiculture industry, bee races and their distribution in Kenya, systems of bee keeping. The bee colony; bee hives and bee keeping equipment. Management of bees; honey harvesting and processing; other bee products. Bee pests, diseases, predators and their control. Health and production records.

Aquaculture: Introduction to aquaculture: history, distribution and size, economic importance of fish farming and general challenges. Fisheries classification: classification criteria, fish species in Kenya, capture fisheries and culture fisheries. Pond construction**;** Stocking the pond: conditioning, species selection, breeding stock, stocking procedure and rate. Routine management. Fish health: common causes of fish death, parasites, diseases, signs of ill health and general methods of treatment. Harvesting and post-harvest handling. Health and production records. Focus should be on the fish and bees production and sustainable use of the environment.

CANH 223: ANIMAL HEALTH APPLIED SKILLS

Course content should provide the trainee with an understanding of the behaviour of relevant animal species, competent use of techniques and equipment for animal handling. Introduction to parts of the animal body. Rope works, knots and halter making. Handling and restraint of farm animals. Animal health tools and equipment, poultry inoculations. Introduction to normal animal behavior: eating habits, mating, nursing and movement behaviour of the domestic animals. Effects of environmental changes on behaviour – temperature, humidity and altitude. Response to intrusion by usual and unusual persons/animals/objects. Identification of farm animals - methods, choices and application. Physical examination, samples and sampling – blood, milk, faeces, urine and saliva. Post mortem, Preservation of specimen, blood and gland smears. Syringes, needles and their care. Weighing and weight estimation, drenching, aging and spraying. Vaccination including poultry, and handling of vaccines and their storage.

CANH 224: INTRODUCTION TO EPIDEMIOLOGY

Course content should introduce the trainee to the basic principles of epidemiology. Definition, importance, concepts, determinants of disease, transmission, measuring disease occurrence. Disease monitoring and surveillance, source of surveillance data, data collection and reporting. Classification and reporting procedures of notifiable diseases. Emphasis should be on disease prevention, control programmes and reporting of notifiable diseases.

CANH 225: ZOONOSES AND ONE HEALTH CONCEPT

The trainee should understand the interaction between the animal, human and the environment and the risk of spreading zoonotic diseases. Introduction to Zoonoses and relation to human, animal and environmental health. Classification of Zoonoses. One health concept. Importance of Biosecurity and Biosafety measures. Occupational health and safety. Environmental hygiene and proper waste disposal, animal food safety assurance. Focus should be multidisciplinary approach to disease prevention and control.

CANH 226: ANIMAL WELFARE, ETHICS AND LAWS

The trainee should be able to understand animal welfare issues, the laws, regulations and policies consistent with the professional and ethical standards. Animal Welfare: definitions, animal freedoms. Principles of animal welfare. Animal care including wild animals.

Handling animals in transport, during slaughter, in sports. Draught animals: use and care. Role of extension in Animal Welfare. Surveillance and Enforcement of Animal Welfare Laws. Legislation on Animal Welfare in Kenya. Ethics and Law: Code of Ethics for Veterinary Surgeons and Veterinary Paraprofessionals. Important Policies: Veterinary Policy. National livestock policy, Vision 2030, Veterinary service delivery guidelines. List of important legislations in Animal Resource Industry. Animal Diseases Act, Veterinary surgeons and veterinary para-professionals Act and regulations, Veterinary Medicines Directorate Regulations.

CAGR 112: ENTREPRENEURSHIP

Course content should provide the trainee with an understanding of the principles of Entrepreneurship. Entrepreneurship and self-employment: definitions; theories of entrepreneurship; role of entrepreneurship in development, government strategies/incentives on small scale enterprises

in Kenya; entrepreneurship motivation: characteristics of a successful entrepreneur; self- assessment of entrepreneurial potential; acquisition of entrepreneurial skills; entrepreneurial awareness: business information; procedure in starting a business; forms of business; business environment; entrepreneurial competencies: decision making process; coping with competition; risk minimization; time management; entrepreneurial opportunities: definitions; qualities of a business opportunity; generation of business ideas; sources of business ideas; selection of a suitable market; business finance: sources of finance; factors to be considered by borrowers. Business Plan: definition and importance; components; writing a business plan; enterprise management: definition; functions; setting business objectives; public relations; customer care; ethics and integrity; pricing. The focus should be to encourage the trainees to start and manage their own business enterprises.

CAGR 228: AGRIBUSINESS

Course content should provide the trainee with basic principles in Agribusiness. Agribusiness: Scope and overview; Economic principles applied in Agriculture; Demand and Supply; Nature of Agricultural Production; Factors of Production; Risks and Uncertainties. Farm Planning and Budgeting: Basic steps in farm planning; Gross margin analysis; Farm Budgets; Farm Records and Accounting cycle: Journal entry, Posting to Ledgers, Trial Balance, Income statement, Balance Sheet. Focus is on application of economic principles for profitable livestock enterprises.

CANH 229: FIELD ATTACHMENT

The trainees are exposed to practical field conditions under the supervision of field officers in order to expose them to livestock production practices, disease prevention and control, clinical services, herd health, laboratory services, extension, pharmaceutical and enterprise management. The trainee will be assessed during the attachment period.

APPENDICES

a. Appendix I: Facilities

i. Classrooms

S/No	Name of Classroom	Average Size (M^2)	Resources in the Room	Condition	Current Use	Remarks
1	AGES	45	• White board • Chairs • 2 fluorescent lights	Good & New	24 students	Conducive for use
2	AGES	45	• White board • Chairs • 2 fluorescent lights	Good & New	24 students	Conducive for use
3	AGES	45	• White board • Chairs • 2 fluorescent lights	Good & New	24 students	Conducive for use
4	AGES	45	• White board • Chairs • 2 fluorescent lights	Good & New	24 students	Conducive for use
5	AGES	45	• White board • Chairs • 2 fluorescent lights	Good & New	24 students	Conducive for use
J9	AGES	30	• White board/black board • Chairs • 1 fluorescent lights	Good but old	15 students	Conducive for use
J10	AGES	30	• White board/black board • Chairs	Good but old	15 students	Conducive for use

			• 1 fluorescent lights			
J11	AGES	30	• White board/black board • Chairs • 1 fluorescent lights	Good but old	15 students	Conducive for use

ii. Laboratories & Workshops

S/No	Laboratory	No	Capacity
1.	Microbiology	1	20
2.	Microbiology/parasitology	1	20
3.	Anatomy	1	20
4.	Pharmacology & Toxicology	1	20
5.	Biochemistry Lab	1	20
6.	ICT Laboratory	2	20 each
7.	General Science	1	20
8.	Engineering Workshop	1	30

b. Appendix II: Teaching Demonstration Farm (Animals & Equipment)

Species	Number	Herd Structure (list)	Farm Equipment (list)
Cattle	To be bought, procurement on-going	1 dairy unit	Procurement ongoing

Sheep	To be bought, procurement on-going	1 unit	Procurement ongoing
Goats	To be bought, procurement on-going	1 unit	Procurement ongoing
Pigs	To be bought, procurement on-going	1 piggery	Procurement ongoing
Poultry	To be bought, procurement on-going	2 poultry houses	Procurement ongoing
Rabbits	**12.** more to be bought, procurement on-going	2 rabbitry with 12 Rabbits	Procurement ongoing
Bees	5 bee-hives	Apiary	Bee-hives installed

Note: Kisii National polytechnic has a memorandum of agreement with neighbouring KALRO and ATC with adequate Livestock resourses for training pending procurement of our farm livestock.

c. Appendix III: Offices

S/No	Type	Number	Capacity	Usage
1	Administrative Offices at Agriculture Department	4	4 Staff	Good condition
2	Administrative Offices at Engineering Workshop	2	4 Staff	Good condition
3	Trainers' Offices at the KNP New building	1	16 Staff	Good condition
4	Technical Staff Offices at the Laboratories	2	6 Staff	Good condition

d. Appendix IV: Equipment & Teaching Materials

Item	Type	Number	Capacity
Desktop Computers	HP COMP	3	
Laptops/Notebooks	Acer, Lenovo Del Hp	5	
Animal Health Applied Skills equipment	Burdizzo castrators Drenching Gun Hoof Trimmer Embryotone wire Ear tag applicator Debudding iron CMT Test Plates Elastrator with Elastrator rubber ring Shears Postmortem Knives Postmortem metal trays Cool box 10l capacity Assorted surgical Equipment Liquid Nitrogen Cylinders Insemination Gun (pistolette)	Procurement Ongoing	

	MC Master slides		
Animals	Dairy Cows Goats Sheep Chicken Rabbits Fish Bees	Procurement Ongoing	
Teaching Charts	Bovine General Body Parts Avian General body parts Goat general body parts Sheep general body parts Pig general body parts Integument system (Skin Layers Physiology Charts Parasitology charts Different types of parasites Specific organs	1 1 1 1 1 1 1 1 1	
Skeletons	Bovine Caprine Avian Rabbits Organs (liver Heart, etc.)	1 1 2 2 1	

Farm Tools/implements	Wheel Burrows Jembes Pangas Rakes Hand trowels Bee Keeping Tools	2 5 5 2 5 Procurement Ongoing	
Laboratory Equipment	Microscopes Autoclave Centrifuge Analytical Scale Incubator Refrigerator Chest Freezer Electric Oven Colony Counter Bio-Safety Cabinets	3 3 2 3 1 1 3 1 1	
Projectors		2	
Computer Software	SPSS, Moodle SAS	3	
TV		1	50

e. Appendix V: References & Recommended Teaching Materials

1. ANATOMY

Title	Author	Year of publ.	copies
Textbook of Veterinary Anatomy 4th edition	Keith M., Wolfgang O. and C.J.G. Wensing	2009	5
The Merck Veterinary Manual 10th Edition	Cynthia, M. KahnScott Line (Associate Editor)	2010	2

2. HISTOLOGY

Title	Author	Year publ.	copies
Textbook of Veterinary Histology	JO ANN Eurell and Brian L.Frappier	2006	3
Text book of Histology	Leslie P. Gartner 4th edition		4
Wheaters Basic Histopathology	Alan Steven's, James S. Lowe, Barbara Young 4th Edition		5
Fundamental Histology 4th Edition	B. Young, J.W. Health		5
Junqueiras Basic Histology 14th Edition	Anthony L. Mescher		5

3. EMBRYOLOGY

Title	Author	Year publ.	copies
Veterinary Embryology	T.A. McGready, M.T., Ryan, et al	2006	3

4. PHYSIOLOGY

Title	Author	Year of publ.	No. of copies
Cunningham's Textbook of Veterinary Physiology	Bradley G. Klein PhD	2019	5
Essentials of Animal Physiology	S.C. Rastogi	2007	3

Animal Physiology Adaptations and Environment 5th Edition	Knut Schmidt, Nielsen		5
Anatomy & Physiology in Health & Illness 9th Edition	Anne Waugh, Allison Curant		5
Animal Physiology	Mohan P. Arora		3

5. BIOCHEMISTRY

Title	Author	Year of publ.	No. of copies
Principles of Biochemistry	David Lehninger Nelson	2012	5
Principles of Biochemistry 5th Edition	Michael M. Cox, David L. Nelson		3
Principles of Biochemistry 4th Edition	David L. Nelson, Michael M. Cox		3

6. PATHOLOGY

Title	Author	Year of publ.	No. of copies
Handbook on Animal Diseases in the Tropics, 4th Edition	Ahmad Afshar		4
Fundamentals of Veterinary Clinical Pathology	Micheal A. Scott and Steven L. Stockham	2002	5
Veterinary Medicine: Textbook of the diseases of cattle, sheep, pigs, goats and horses 9th edition	Radostitis, Otto, M.T.,	2000	5
Veterinary Microbiology and Microbial Diseases	B.K. Markey, Peter J. Quinn	2011	5
Muir's Textbook of Pathology 14th Edition	David A. Levinson, Robin Reid, Alastair Burt		5

7. HAEMATOLOGY

Title	Author	Year of publ.	N0. Of copies
Practical Haematology 9th Edition	S.M. Lewis, B.J Bain, I. Bates		5
Modern Haematology 2nd Edition	Reinhold Munker, M. D Erhard Hiller, M.D Jonathan Glass M.D Ronald Paquette M.D		5

8. PARASITOLOGY

Title	Author	Year publ.	copies
Foundations of Parasitology, 8th Ed. McGraw-science	Nicholas F.W.,	2003	5
Parasites: a guide to laboratory procedures and identification	Ash, L.A and T.C. Orihel		5
Foundations of Parasitology 9th Edition	Larry S. Roberts, John Janory, J. I Steve Nadler		5
Introduction to Animal Parasitology 3rd Edition	J.D Smyth		5

9. MICROBIOLOGY

Title	Author	Year publ.	copies
Veterinary Microbiology and Microbial Diseases	B.K. Mackf cvey, Peter J. Quinn		5
Microbiology 3rd Edition	Dr. Arora, B. Arora		5
Higher Biology a Laboratory Manual	J. J. Torrance		1
Prescott's Microbiology 8th Edition	Joanne M. Willey, Linda M., Christopher J. Wolvertion		3

Medical Microbiology & Immunology 14th Edition	Warren Levinson		5
Microbiology an Introduction 12th Edition	Gerald J. Tortora, Berdell R. Funke, Christine L. Case		5
Practical Microbiology	Bharti Arora, D.R. Arora		5

10. PHARMACOLOGY & TOXICOLOGY

Title	Author	Year of publ.	No. of copies
Clinical pharmacology and therapeutics for veterinary technicians	Robert L. Bill	2006	2
Textbook OF Veterinary Pharmacology and Toxicology	Ruckebusch, Toutain and Koritz	1983	5
Rang & Dales Pharmacology 6th Edition	H.P. Rang, M.M. Dale, J.M Ritter, R.T Flower		5

11. MEDICINE

Title	Author	Year of publ.	No. of copies

12. SURGERY

Title	Author	Year of publ.	No. of copies
Veterinary Surgical Techniques	Amresh Kumar	2001	3
Essentials of Veterinary Surgery 8th Edition	A. Venugopalan		5

13. THERIOGENOLOGY

Title	Author	Year publ.	copies

14. PUBLIC HEALTH

Title	Author	Year publ.	copies
Farm Animal Welfare	Benard E. Rollin	2003	5

15. ANIMAL GENETICS & BREEDING

Title	Author	Year publ.	copies
Introduction to veterinary Genetics	Malden MA, Blackwell	2009	3
Concepts of Genetics 6th Edition	William S. Klug, Michael R. Cummings		3
Genetics	Monroe W. Strickberger		1
Understanding Animal Breeding 2nd Edition	Richard M. Burdon		5
Animal Husbandry	Ashok Kumar		3
Modern Livestock & Poultry production 9th Edition	Frank B. Flanders, James R. gillespie		5

16. ANIMAL NUTRITION

Title	Author	Year publ.	copies
Range Management: principles and Practices 6th Edition	Jerry L. Holechek et al	2010	3
Basic Principles of Livestock Management	Hysen Bytyqi	2011	3
Aquaculture: Farming aquatic animals and Plants 3rd Edition	John S. Lucas, Paul C. Southgate and Craig S. Tucker	2000	3
Principles of Cattle Production 2nd Edition	Clive J.C Philips		5

17. EPIDEMIOLOGY & BIOSTATISTICS

Title & Publisher	Author	Year of publ.	No. of copies

Immunology 7th Edition	David Male, Jonathan Brostoff, Ivan Roith		5

i. Library Resources

The institution has a modern library facility equipped with books and online resources to enhance animal Health study from within. Some of the books include;

ii. Internet Access Points

All offices are connected to internet and supplied with desktop computers. Learners can access free Wi-Fi at specific designated areas.

The library is equipped with computers connected to free internet for learners and trainers to access academic materials online.

The institution has unlimited internet access with a strong server installed in the Server room near the library.

Kisii National polytechnic Website has a link to access **E- Library Resources** for **Animal Health** students. The website domain is http://www.kisiipoly.ac.ke.

Kisii National Polytechnic subscribes to a number of databases through which students can access full articles journals for free.

The **E-Library** can be accessed through E-books; http://kisiipoly.ac.ke/eResources/eBook.php, Journals: http://kisiipoly.ac.ke/eResources/journals.php and Resourses; http://kisiipoly.ac.ke/eResources/eResource.php

There is also link on the Kisiipoly website for **E-learning** using **Moodle Platform.** The Trainers use **Blended Learning** approach and therefore **Moodle Platform** necessary.

f. Appendix VI: Teaching Staff

S/no	Name	Academic qualification	Registration Body
1.	Dr. Janet Cheptoo Siele	Vet Surgeon	Head Of Animal Science Section Trainer-Animal Health
2.	Dr. Allan Muiruri	Vet Surgeon	Animal Health Trainer
3.	Dr. Sharlet Openda	Vet Surgeon	Animal Health Trainer
4.	Dr. Japhet Nyamweya	Vet Surgeon	Animal Health Trainer
5.	Dr. Amos Nyamweya	Vet Surgeon	Animal Health Trainer
6.	Dr. Samwel Ondieki Nyamweya	Vet Surgeon	Animal Health Trainer
7.	Evans Morara	MSc AGED on going BSc AGED Diploma in AGED	Head of Department
8.	Eunice Araka	BSc AGED	Deputy Head of Department
9.	Obondo Kevin Otieno	MSc Soil Science on - going BSc Soil Environments & Land Use Management 2017	Crop, Soil & Horticulture Coordinator
10.	Okinda Wetaba Fredrick	BSc Agricultural Engineering 2017	Head Engineering Coordinator
11.	Fredrick Mosoti Mayaka	MSc Analytical Chemistry on-going	Trainer

		Bachelor of Science (Biochemistry & Chemistry)	
12.	Dorcas Maina	MSc on going BSc AGED Diploma in Horticulture	Head Agro Processing & Value Addition Coordinator
13.	Nyang'wono Kinanga Naom	MSc Environmental Science on-going Bachelor of Environmental Studies 2014	Head Environmental Section Coordinator
14.	Benjamin Kisiangani	MSc Agricultural Economics on going BSC Agricultural Economics	Trainer
15.	Morondi Osiemo David	MSc Public health on going BSC Environmental Health 2015 Diploma in Applied Biology 2010	Trainer
16.	Godner Bwari Peter	MSc Public Health 2018 BSC Environmental Health 2014	Trainer
17.	Omagwa Emmah Kemuma	MSc Agric Extension on-going PGDE Science (Biology/Agriculture 2016) BSc AGED 2011	Trainer
18.	Absolom Onwong'a Mokua	Bachelor of Agribusiness Management 2012	Trainer

19.	Noor Dahia Hanshi	BSc Animal Science 2017	Trainer
20.	Ondemo Fredrick Mang'era	MSc Fisheries on-going BSc AGED 2015 Diploma in Agriculture 2008	Trainer
21.	Nyagwansa Obunga Hezbon	Bachelor of Education and Counseling 2013 Diploma in Education and Counseling 2011	Trainer
22.	Atuti Stella Kemunto	PhD Plant pathology on-going MSc Plant Pathology 2016 BSc AGED 2014	Trainer
23.	Nchobera K Tabitha	BSc AGED 2017 Diploma in Applied Biology Diploma Technical Education	Trainer
24.			

g. Appendix VII: Technical/Support Staff and Qualifications

S/no	Name	Academic qualification	Registration Body
1.	Denis Muhavi	BSc Animal Health Management on going diploma in Animal Health 2008	Animal Health Technician & AI
2.	Leonard Kirui	BSc Microbiology & Biotechnology 2012 Diploma in Medical Laboratory Sciences	Microbiology Technician

Appendix VII: Accommodation, Recreational Facilities, Water Resources & Electricity

1. **Recreational Facilities – Sports playground** for ball games such as **football** and **volleyball** is available. There are two main **recreational parks** ideal for relaxing and study. There is also **a forest park** for nature walk and bird viewing. There a huge student centre at the centre of the institution parked with the **hall**, **canteen**, **dining hall**, **kitchen**, **food store**, **shops & common room** for watching **TV**.
2. **Hostels** for student accommodation for both **female** and **male students** for those from far. Capacity is 200 students.
3. **Water source** - piped Kisii County Government water. The institution has **a borehole** supplementing water supply and ensuring presence of water 24/7. There is also **water taps** through the compound and in the hostels, kitchen, washrooms, and around lecture rooms.
4. There is a huge recreational hall for **Drama** and **Theater activities**, **Seminars** and **Conferences** on Library ground floor. [Note: the hall is also used for carrying out **exams**].