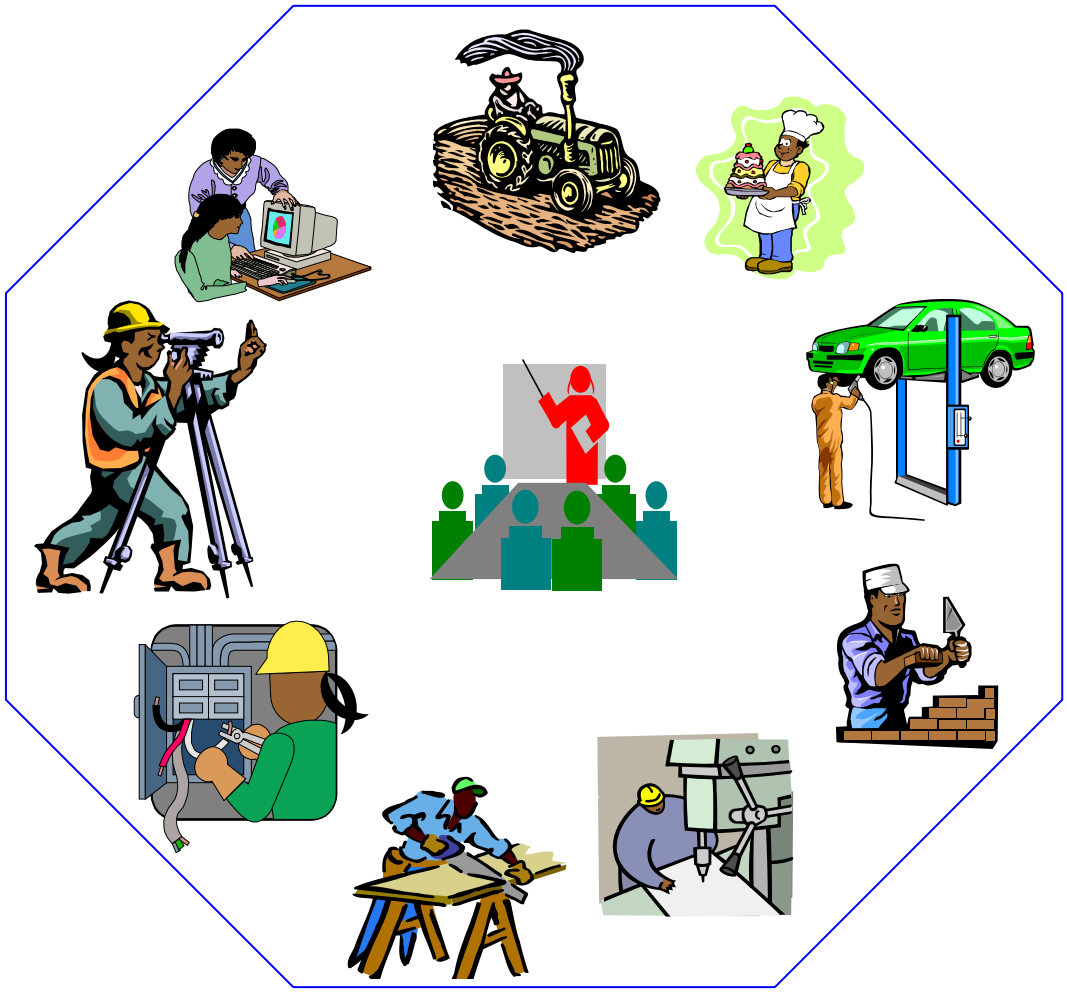
የሥራና ክህሎት ሚኒስቴር
Ministry of Labor and Skills

Federal Democratic Republic of Ethiopia

OCCUPATIONAL STANDARD

ANIMAL HEALTH

NTQF Level I-IV



Ministry of Labour and Skill

March 2022

Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting, and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role about technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopia Occupational Standards (EOS) is the core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF). They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording, and layout for the Ethiopia Occupational Standard which is comprised of Units of Competence.

A Unit Title describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title and NTQF level
- Unit title
- Unit code
- Unit descriptor
- Elements and Performance Criteria
- Variables and Range
- Evidence guide

Together all the parts of a Unit Title guide the assessor in determining whether the candidate is competent. The ensuing sections of this EOS document comprise a description of the occupation with all the key components of a Unit Title

- chart with an overview of all Units of Competence for the respective level including the Unit Codes and the Unit Titles
- contents of each Unit Title(competence standard)
- An occupational map providing the technical and vocational education and training (TVET) providers with information and important requirements to consider when designing training programs for this standard and the individual, a career path.

1. Modification History

1.1 Occupational Title:

This occupational Standard is set for Animal Health level I, II, III, and IV. This occupational Standard is version 4 and revised in March 2022.

1.1. Description of the Occupation

1.1.1. Level Description

Level I

Competencies in this level equip the trainees with knowledge and skill to perform very important tasks in animal health care activities and with a minimum level of underpinning experience, but with better literacy than layman. The range of roles played and needed performance at the end of training include understanding the special behavior of animals, capturing and safe restrain safely to provide health care and for other purposes. It also covers performing cleaning and sanitation of basic tools and equipment, animal premises, and appropriate waste disposal associated with Animal Health. Applications involve some responsibility for which she/he doing in the workplace, however it needs regular monitoring by supervisors of the same profession. Participation in teams including group or team co-ordination may be involved.

Level II

Breadth, depth and complexity of competences are prepared balanced to maturity of trainees that can have contribution for understanding basic locations and functions of normal animal body systems, tissues and functions ultimately identifying abnormal changes to take therapeutic and surgical correction measure. It also requires contribution in animal husbandry system as a prevention and control method of veterinary diseases with some discretion of identifying and handling animal health problems. The competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are non - complex and routine.

Level III

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organizing activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to handle advanced cases of animal health problems, with a discretion to collect necessary materials, diagnose infectious and non-infectious animal diseases as well as provision of some leadership and guidance to others. Applications involve responsibility for, and limited organization of, others.

Level IV

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organizing activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to carry out minor degrees of surgical operations, preventing the public from zoonotic diseases through maintenance of hygienic food of animal origin and community education, executing rational veterinary drug and chemical use, veterinary disease control prevention, quarantine operation, identifying and reporting livestock emergency problems at national level with high level of responsibility and maturity.

1.1.2. Occupant Performance Profile

Level I

Animal Health Level I

Occupational standard for this level cover description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Identify and handle basic veterinary tools and equipment
- Carry out cleaning for animal care work and waste management
- Handle and restrain animals
- Identify sick animals
- Provide basic health care for animals

Animal Health level II

Occupational standard for this level covers description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Understand basic Anatomy and Physiology of animals
- Identify Pathological Lesions
- Carryout General Clinical Examination of Animals
- Apply animal feeding and nutrition
- Identify basic veterinary drugs and chemicals
- Perform reproductive health care and Artificial Insemination

- Apply Knowledge of Animal Welfare and Behaviours

Level III

Animal Health level III

Occupational standard for this level covers description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Identify and handle non-infectious animal diseases
- Identify and handle parasitic diseases of animals
- Identify and handle infectious diseases of animal
- Provide routine veterinary Clinical service
- Perform pre-surgical operative procedures and wound management
- Identify and handle pest, predator and diseases of honey bee colony
- Identify and handle pest, predator and diseases of fish
- Provide First aid and Respond to Emergencies for animals
- Conduct Animal Health Extension and Community veterinary

Level IV

Animal Health level IV

Occupational standard for this level covers description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Apply Veterinary Drug and chemicals
- Perform Minor Surgical and Obstetrical Operations
- Carryout veterinary clinical practices
- Apply general Laboratory Techniques and procedures
- Carry-out Inspection of animal origin food and Veterinary Public Health Activities
- Conduct prevention and control of animal disease
- Perform animal quarantine operation
- Carryout poultry health practice
- Carryout Animal Husbandry and Farm Management
- Apply Animal Health Related Legislatives, Guidelines, Standards

Unit Code:

There are agreed conventions for the unit codes used for unit of competences organized for any specific occupational standard. Codes are given by considering international and national benchmarks.

Example:

Unit Title: Perform Surgical and Obstetrical Operations

Unit Code: AGR ANH4 02 0322

Unit Coding is described here under:

Character	**What it stands for:**
AGR	First three characters signify *sector* acronym. **AGR** *represents Agriculture*
ANH4	Four characters in the second group signify the acronym of the occupational title expressed as a work function and qualification level written in numerical form shows the unit belongs. **ANH** represents animal health services and the *number 4 represents that the occupational standard serves for Level IV*
02	Third group with two numbers signify the numerical order of the specific unit in the level occupational standard
0322	Fourth group of four characters signify the month and year of OS development. *E.g.* ***March 2022***

1.2.3 Version Change

This occupational standard is developed in the title of **"Animal Health *"for** level, II, III and IV. The title of the occupational standard for this version has changed the existed Animal Health (Level I to VI). Most of units of competences from the previous version was modified, some are endorsed, merged , some are eliminated and some new unit of competencies are newly synthesised and added by considering the current demand in the industry/labour market.*

The version number for future revision will either be changed or not, depending on the extent of the change. Thus, those who are responsible to undertake competence assessment and provide training should check for the version number and review date of the document to confirm the latest version number before developing assessment tools and commence training respectively. Users are also advised to contact the agency for any doubts they have on the document or may refer to the website.

The development date is the time the document is prepared and validated by relevant industry experts and approved by relevant sector leading the industry. It indicates the effective date to use the document for training and assessment purposes and termination of use of the previous version for any purposes.

The endorsed occupational standards and their components may remain current up to five years from the date of development. This version is developed in ***March 2022.***

Previous Occupational Standard	**Modified Occupational standard**
Name and Level: Animal Health: Level I	Name and Level: Animal Health Level I
Name and Level: Animal Health: Level II	Name and Level: Animal Health Level II
Name and Level: Animal Health:: III	Name and Level: Animal Health Level III
Name and Level: Animal Health: Level IV	Name and Level: Animal Health Level IV
version: Three	version: Four
Date of Development: March 2018	Date of Development: March 2022

1.2.4 Revision Changes

Level	**Changes on the units**	**Justification/Remark**
I	***Endorsed Units:*** • Identify Sick Animals	• *Correction only on the naming and some elements* • *These were at the right position at appropriate time*
	Merged Units: • Support Animal Care Cleaning Activities • Use and Maintain Basic Tools and Equipment • Work in the Animal Care Industry • Support Health Care Provision for Pregnant, Parturient and Lactating Animals • Support Health Care Provision for the New-born Animals • Provide basic First Aid to animals	Inseparable and interrelated activities and it was specific to stand by itself as competencies
	Shifted Units: Apply Knowledge of Animal Welfare and Behaviours	Level of complex city to beginners
	Removed Units: Follow Occupational Health and Support Procedure Apply the Basics of Human Nutrition Practices Support Gender Mainstreaming and HIV/AIDS Initiatives	Insertion is made in different ways to each of UoCs depending upon the context

Level	Changes on the units	Justification/Remark
	<u>New units Added</u> • Identify and handle basic veterinary tools and equipment • Carry out animal care cleaning and waste management activities. • Handle and Restrain Animals. • Provide basic health care for animals	Important and simple task to binger veterinarian. Require minimum knowledge and skill and also mandatory to every person engaged in animal health care Inseparable activity and can be performed simultaneously by a single personnel Provide emergency response to animals is available in level III and here it is redundant It importance in workplace due to technological advancement
II	***Endorsed Units:***	• Basic input for all activities in animal health care help to locate clinically and surgically important tissues and organs • Limiting the range suitable to this level of trainees. • Incorporating reception duties , reorganizing elements and other components suitable
	Merged Units: • Carry out Basic Veterinary Reception Duties • Assist General Animal Health care • Operate and Maintain Equipment and Tools • Identify and Use Basic Veterinary Chemicals and Reagents • Carry out Sanitation and Waste Management Duties • Collect, preserve, transport and store laboratory samples • Carry out Sanitation and Waste Management Duties • Participate in Environmentally Sustainable Work Practices	1.Carrying out reception duties and other health care activities in the current situation of veterinary clinic in almost all parts of Ethiopia is accomplished by a single practitioner 2. Its one element of animal health care in application. Time and resource saving

Level	Changes on the units	Justification/Remark
	Replaced Units: • Assist with Animal Nutrition and Husbandry Practices • Administer Medications to Livestock	
	Shifted Units: • Handle and Restrain Animals • Assist Animal Surgical Operation • Apply General Laboratory Activities	• Require minimum knowledge and skill and also mandatory to every person engaged in animal health care
	Removed Units:	• Some of the essential elements was modified and incorporated suitable to the UoC "identify and handle basic tools and equipment" in level I. • Impracticable to carry out by itself due to time and resource limitation • Merged to cleaning and sanitation activities the shifted to level I • More advanced task and difficult to perform at this level • Covered in other UCS and redundant
	New units Added • Understand basic Anatomy and Physiology of animals • Identify Pathological Lesions • Carryout General Clinical Examination of Animals • Apply animal feeding and nutrition • Identify basic veterinary drugs and chemicals • Apply Knowledge of Animal Welfare and Behaviours • Perform reproductive health care and Artificial Insemination	

Level	Changes on the units	Justification/Remark
Level III	***Endorsed Units:*** • Handle Parasitic Animal Diseases • Identify and Control Pests and Disease in a Honey Bee Colony • Identify and Control Pest, Predators and Disease of Fish	
	Merged Units: • Respond to Emergencies • Identify and Organize Veterinary Drugs and Chemicals • Perform Pregnancy test in animals • Assist In Animal Origin Food Hygiene and Inspection • Carry out Sample Collection, Preservation and Shipment • Apply Laboratory Techniques and Procedures • Identify Reproductive Diseases and Other Fertility Problems • Implement Livestock Emergency Guidelines and Standards (LEGSs) → then merged • Provide Information to the Clients	Inseparable and related tasks
	Shifted Units • Participate in General Clinical Examination of Animals • Participate in Animal Diseases Prevention and Control Activities • Perform Animal Quarantine Operations Carry out Sample Collection, Preservation and Shipment	To maintain coherency of UoCs and trainees level of maturity to hold this kind of responsibilities Its importance, complexity and require vast responsibility
	Removed Units • Apply Workplace OHS Procedures • Provide Specific Animal Care Advice • Record and Present Veterinary Data • Promote Nutrition Sensitive Agriculture • Provide Training through Instruction and Demonstration of Work Skills	• Insertion is made in different ways to each of UoCs depending upon the context • Indirectly covered in other competencies • Redundant • Related and inseparable

Level	Changes on the units	Justification/Remark
		• Indirectly applicable by providing veterinary health service • Incorporated to public health awareness creation in level IV • Cannot stand as UoC by its self and indirectly practicable in some core UoCs
	New units Added • Identify and handle non-infectious animal diseases • Identify and handle infectious diseases of animal • Provide routine veterinary Clinical service • Perform pre-surgical operative procedures and wound management • Provide First aid and Respond to Emergencies for animals • Conduct Animal Health Extension and Community veterinary	• Very demanding in the current dairy industry • Very essential to develop their knowledge and skill gained in the campus , and improve their communication skill with community, work partners and officials
Level IV	***Endorsed Units:*** • Perform Minor Surgical and Obstetrical Operations • Identify and Handle Diseases of Wild Animals	Distribution of vet. Doctors in Ethiopia is scarce, and TVET graduates need to cover most general surgical and obstetrical operations especially in rural areas
	Merged Units: • Euthanize Sick, Injured or Unwanted Animals • Participate in Prescription and Administration of Veterinary Drug • Carry-out Veterinary Public Health Activities • Control Trans-boundary Animal Diseases with Others in the Animal Care Industry • Conduct Basic Laboratory Techniques and Procedures • Participate in Prescription and Administration of Veterinary Drug	Related and inseparable tasks

Level	Changes on the units	Justification/Remark
	• Identify and Handle Major Diseases of Ruminants, Poultry and Swine • Identify and Handle Major Diseases of Equines and Swine • Identify and Handle Diseases of Companion Animals • Supervise Animal Health Programs • Conduct Animal Health Extension Service Delivery • Develop and Implement Community Programs • Analyze and Interpret Service Data for Animal Health	
	Shifted Units: • Develop knowledge of Pathological Lesions	Appropriate place to maintain coherency and relevance to the next UoCs
	New units Added: • Apply Veterinary Drug and chemicals • Carryout veterinary clinical practices • Apply general Laboratory Techniques and procedures • Carry-out Inspection of animal origin food and Veterinary Public Health Activities • Conduct prevention and control of animal disease • Perform animal quarantine operation • Carryout poultry health practice • Carryout Animal Husbandry and Farm Management • Apply Animal Health Related Legislatives, Guidelines, Standards	Demanding in the current industry Its importance, complexity and require high responsibility

Occupational Standard: Animal Health

Occupational Code: AGR ANH1

NTQF Level I

AGR ANH1 01 0322 Identify and Handle Basic Veterinary Tools and Equipment	**AGR ANH1 02 0322** Carry out Cleaning for Animal Care Work and Waste Management Activities	**AGR ANH1 03 0322** Handle and Restrain Animals
AGR ANH1 04 0322 Identify Sick Animals	**AGR ANH1 05 0322** Provide Basic Health Care for Animals	**AGR ANH1 06 0322** Apply Agricultural Extension Service
AGR ANH1 07 0322 Implement Agribusiness Marketing	**AGR ANH1 08 0322** Apply Basics of Human Nutrition Practices	**AGR ANH1 09 0322** Apply 5S Procedures

UNIT OF COMPETENCE CHART

Occupational Standard: Animal Health

Occupational Code: AGR ANH2

NTQF Level II

AGR ANH2 01 0322 Identify basic Anatomy and Physiology of Animals	**AGR ANH2 02 0322** Identify Pathological Lesions	**AGR ANH2 03 0322** Carryout General Clinical Examination of Animals
AGR ANH2 04 0322 Apply Animal Feeding and Nutrition	**AGR ANH2 05 0322** Identify Basic Veterinary Drugs and Chemicals	**AGR ANH2 06 0322** Perform Reproductive Health Care and Artificial Insemination Activities
AGR ANH2 07 0322 Apply Knowledge of Animal Welfare and Behaviours	**AGR ANH2 08 0322** Apply Agricultural Extension service for Rural development	**AGR ANH2 09 0322** Prevent and Eliminate MUDA

Occupational Standard: Animal Health

Occupational Code: AGR ANH3

NTQF Level III

AGR ANH3 01 0322 Identify and Handle Non-Infectious Animal Diseases	**AGR ANH3 02 0322** Identify and Handle Parasitic Diseases of Animals	**AGR ANH3 03 0322** Identify and Handle Infectious Diseases of Animal
AGR ANH3 04 0322 Provide Routine Veterinary Clinical Service	**AGR ANH3 05 0322** Perform Pre-Surgical Operative Procedures and Wound Management Activities	**AGR ANH3 06 0322** Identify and Handle Pest, Predator and Diseases of Honey Bee Colony
AGR ANH3 07 0322 Identify and Handle Pest, Predator and Diseases of Fish	**AGR ANH3 08 0322** Provide First Aid and Respond to Emergencies for Animals	**AGR ANH3 09 0322** Conduct Animal Health Extension and Community Veterinary Service
AGR ANH3 10 0322 Apply Digital Technology in Agriculture		

Occupational Standard: Animal Health

Occupational Code: AGR ANH 4

NTQF Level IV

AGR ANH4 01 0322 Apply Veterinary Drug and Chemicals	**AGR ANH4 02 0322** Perform Minor Surgical and Obstetrical Operations	**AGR ANH4 03 0322** Carryout Veterinary Clinical Practices
AGR ANH4 04 0322 Apply General Laboratory Techniques and Procedures	**AGR ANH4 05 0322** Carry-out Inspection of Animal Origin Food and Veterinary Public Health Activities	**AGR ANH4 06 0322** Conduct Prevention and Control of Animal Disease
AGR ANH4 07 0322 Perform Animal Quarantine Operation	**AGR ANH4 08 0322** Carryout poultry health practice	**AGR ANH4 09 0322** Carryout Animal Husbandry and Farm Management
AGR ANH4 10 0322 Apply Animal Health Related Legislatives, Guidelines, Standards and Work Ethics	**AGR ANH4 11 0322** Identify and Handle Diseases of Wild Animals	**AGR ANH4 12 0322** Develop value chain analysis

Level I

Occupational Standard: Animal Health Level I	
Unit Title	**Identify and Handle Basic Veterinary Tools and Equipment**
Unit Code	**AGR ANH1 01 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to identify and handle basic tools and equipment. The unit also requires the application of skills and knowledge to a specified range of tasks to clean and store basic veterinary tools and equipment. In addition, the competence requires an awareness of workplace safety and positive environmental practices associated with equipment operation.

Element	Performance Criteria
1. Identify, Prepare and use basic tools and equipment	1.1. Suitable ***PPE, Tools, and equipment*** are identified, selected, used, maintained, and stored following instructions and OHS requirements. 1.2. The use of basic veterinary tools and equipment are well understood 1.3. Routine ***pre-operational checks*** of tools and equipment are carried out to the manufacturer's specifications. 1.4. A simulation trial is carried out on how to operate basic tools and equipment. 1.5. Unsafe or non-functional tools and equipment are identified, segregated, and reported for repair or replacement. 1.6. ***OHS hazards*** in the workplace are identified and reported to the supervisor.
2. Undertake cleaning activities	2.1. Cleaning activity is undertaken in a safe and environmentally appropriate manner according to organizational guidelines. 2.2. Problems or difficulties in completing work to the required standards or timelines are reported to the respective hierarchy. 2.3. Waste material produced during cleaning activities is stored in a designated area according to supervisors' instructions.
3. Handle and store basic tools and equipment	3.1. Cleaning materials are stored or disposed of according to manufacturer's instructions 3.2. Tools and equipment are maintained and stored according to manufacturers' specifications. 3.3. Work outcomes are reported to supervisors.

Variable	Range

PPE and equipment	May include, but not limited to: • Boots • Hat/hard hat • Overalls • Gloves • Gown • Apron • Protective eyewear • Hearing protection • Safety harness • Respirator or face mask • Sun protection, e.g., sun hat, sunscreen
Tools and equipment	May include, but not limited to: • Stethoscope • Thermometer • Syringe • Needles of different size and type • Sample collection equipment • Burdizzo and Emasculator • Girth metre • Trocar and cannula • Scissor and forceps • Surgical suture material • Surgical needle holder • Microscope • Autoclave • Glass wares • Water bath • centrifuge • Incubator • Hot oven • Hoof, pick and horn trimmer • Different anima restraining materials
Pre-operational activity	May include, but not limited to: • Cleaning • Identifying and segregating unsafe or faulty equipment for repair or replacement
OHS hazards	May include, but not limited to: • The safe use and maintenance of tools and equipment including guarding of exposed sharp parts • Manual handling, including safe opening and closing techniques • Handling and storage of hazardous substances, • Appropriate use, maintenance and storage of PPE clothing and

	equipment • Outdoor work including protection from solar radiation, hazardous noise and organic and other dusts • Identifying and reporting hazards • Projection of people in the workplace
cleaning activities	May include: Cleaning of tools & equipment, animals and animal housing, including fixtures and fittings, and cleaning the surrounding work areas.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Select, maintain and utilize a range of tools and equipment to complete designated work tasks • Carry • Carry equipment. • Reco hazards • Clear • Demonstrate a safe workplace and environmentally responsible practices
Required Knowledge and Attitude	Demonstrate knowledge and attitude of: • Pre-operational and safety checks for basic tools and equipment • Identifying and using of basic tool and equipment • Hazards associated with the use of basic tools and equipment • Operating principles and operating methods for basic tools and equipments. • Procedures for cleaning, securing and storing basic tools and equipment • Risks associated with the operation of basic tools and equipment • Relevant regulations and Codes of Practice with regard to workplace OHS requirements, and the use and control of hazardous substances • Environmental impacts and minimization measures associated with the operation of basic tools and equipment • Enterprise guidelines with regard to tools and equipment use, recording and reporting routines
Required Skills	Demonstrate skills to: • Use PPE clothing and equipment and when and how it should be used, maintained and stored. • Maintain and re check the basic tool and equipment. • Carry out simulation trial to operate basic tools and equipment • Communicate, Identify, Collect and organize information regard to the performance of tools, equipment, identified faults, and OHS concerns may be reported for repair and organized by records • Plan and organize activities involving use of basic tools and

	equipment • Compute measurement of volumes, weights and consumption, particularly in relation to pre-operational checks • Solve or report problems on tools and equipment breakdowns, faults or malfunctions • Use technology to communicate, measure and record information with regard to tools and equipment maintenance, usage and performance
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level I	
Unit Title	**Carry out Cleaning for Animal Care Work and Waste Management Activities**
Unit Code	**AGR ANH1 02 0322**
Unit Descriptor	This unit covers knowledge, skills and attitude required to clean animal premises, perform animal care cleaning activities, and implement waste management. It requires the ability to identify hazards, follow OHS procedures, clean animal premises, veterinary clinic and laboratories, collect and segregate wastes, prioritize waste treatment and disposal options up on completion of cleaning activities.

Element	**Performance Criteria**
1 Apply OHS procedures	1.1. Understand the concept of OHS and ***types of hazard*** 1.2. Identify work-related hazards and follow ***strict OHS*** procedures. 1.3. Risks related to heat, electricity, detergents and chemical agents are identified, recognized and reported to designated personnel according to organizational policies and procedures. 1.4. Suitable ***PPE*** clothing and ***Equipment*** are selected, checked, used, maintained and stored in accordance with organizational policies and procedures. 1.5. Safe work practices and OHS procedures are implemented in accordance with safety precautions of the organization and specifications.
2 Cleaning animal premises and materials	2.1. Relevant equipment and ***chemicals*** for ***disinfection and sterilization animal health care*** work area and animal premises are prepared according to organizational guideline. 2.2. Legislative and regulation on chemical usage are followed. 2.3. ***Animal health care Working areas*** and ***premises*** are cleaned, disinfected and sterilized following organizational procedures. 2.4. Foot baths and wheel bathes; are prepared and monitored at the gates of animal farms and entry of animal premises, following organizational guidelines. 2.5. Animal houses, Feeding and watering trough are cleaned and disinfected. 2.1 Correct manual handling techniques are used when loading and unloading material to minimise damage to self and the material according to the organisational guidelines.
3 Routine animal care and cleaning activities	3.1. Animal body grooming is performed when required following standard procedures. 3.2. Hoof pecking and trimming in equine, ruminants and camel, debeaking in chicken, wool shearing for sheep are

	performed following standard procedures. 3.3. Animal feed are inspected and maintained free from gross contamination, mould, sharp and indigestible objects.
4 Waste management activities	4.1. Appropriate PPE are selected and used in accordance with the institutional regulation. 4.2. General ***wastes*** are identified and classified in groups based on waste management principles 4.3. Collection, storage and removal of different groups of wastes are carried out according to the organizational guideline and the local area environmental policy. 4.4. Wastes that require prior ***treatment*** before removal/elimination are identified and dealt accordingly following the organizational guidelines. 4.5. Wastes are ***disposed*** of in different ways depending on the groups of waste and national guidelines.

Variable	**Range**
Types of hazard	May include, but not limited to: • Physical hazard • Biological hazard • Chemical hazard • Ergonomic hazard
Strict OHS procedures	May include, but not limited to: • The use of PPE clothing and equipment relevant to the task such as safety goggles and glasses, protective masks and animal handling gauntlets • Protocols for safe work practices include hazard identification and risk minimisation; the handling, use, storage, transport and disposal of chemicals; and the handling and disposal of biological wastes • The handling of chemicals and medicines in the organisation requires extra care to ensure safe work practices are maintained. • Exposure risks such as zoo noses, release of infective agents (both animal and human), chemical spillage and feed contamination
PPE	May include, but not limited to: • Overalls, gloves, eye and ear protection, face masks, boots and head cover
Equipment	May include, but not limited to: • Brooms, rakes, mops, buckets, dust bin and towel, brush and disposal pits.
Chemicals	May include, but not limited to: • Chemicals: Cleaning chemicals, disinfectants, sterilants, laboratory chemicals, (ex. Soap, iodine, iodine tincture, savlone, alcohol, hydrogen peroxide, formaldehyde, MgSO4, ZnSO4, detergents,)
Disinfection and	May include, but not limited to:

sterilization	• Assisting with cleaning of tools & equipment, animals and animal housing, including fixtures and fittings, and cleaning the surrounding work areas • Disinfection of animal houses based on annual plan, during stock exchange, or after disease outbreak • Application of disinfectants at farm gates, at the entrance of animal houses for visitors and vehicles • Cleaning, disinfection and sterilization of tools and equipment based on the level of contamination. • The method of sterilization depends on the type of material or equipment to be sterilized
Animal health care	Animal environment and housing Animal feeding and drinking facilities Animal body cleaning Animal care proving materials and equipment
Animal premises	• May include, but not limited to: Shelter like cage, barn, pen, dairy house, poultry house, fattening area, sheep and goat farm its floor, walls, bedding and surrounding
Animal health care work areas	• May include, but not limited to: Veterinary clinic, laboratory rooms, quarantine and the surrounding
Wastes	May include, but not limited to: • Chemical waste (sterilants and disinfectants, photographic chemicals, disinfectant, detergent and steriliser, formaldehyde. • Offensive waste (disposable masks, aprons, gloves and overshoes and absorbent pads, animal faeces, animal bedding and animal cadaver). • sharps (needles, scalpels and blades • Infectious waste (contaminated dressings, disposable gowns, clinical gloves, contaminated PPE). • Pharmaceutical waste includes (vaccine bottles, empty injection bottles, syringes, whole medicines).
Treatment and disposal	May include, but not limited to: • Dumping and landfill • Incineration/burning • Compaction • burying • biogas generation • composting

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Maintain sanitary condition of animal premises including animal

	environment like housing, shelters, pens barn, feeding and watering troughs. • carry out animal care cleaning activities • Inspect animal feed for the presence of gross contamination, sharp objects feed poisons and other non-digestible foreign material. • Undertake sanitation and waste disposal in animal premises, veterinary clinic and laboratories • Identify types of waste and handle accordingly
Required Knowledge and Attitude	Demonstrate knowledge of: • Personal protection equipment and when and how it should be used, stored and maintained • Safe work practices • Contaminants in animal premises • Gross contaminants and sharp objects in animal feed • Basic OHS rules required to work near and around chemicals • Waste disposal and treatment • Environmental impacts of chemical use
Required Skills	Demonstrate skills to: • Maintain sanitary condition of animal premises including animal environment like housing, shelters, pens barn, feeding and watering troughs. • Inspect animal feed for the presence of gross contamination, sharp objects, feed poisons and other non-digestible foreign material. • carry out animal care cleaning activities by following workplace instructions and directions from the chemical label • Communicate information about spillages, accidents or deficiencies in procedures and practice • Undertake sanitation ,treatment and waste disposal in animal premises and health care working areas • Clean, store and maintain equipment and materials • Follow sequenced written instructions; and record information accurately and legibly including organisational policies and procedures in OHS • Oral communication skills required to fulfil the job role as specified by the organisation
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level I	
Unit Title	**Handle and Restrain Animals**
Unit Code	**AGR ANH2 03 0322**
Unit Description	This unit covers knowledge, skills and attitude required to undertake capturing and restraining animals for the purpose of diagnosis, treatment, transportation and use as draft power. It also covers understanding normal behaviour and skill to handle animals following OHS guide lines and procedures.

Element	Performance Criteria
1. Develop understanding of animal behaviour	1.1. Behavioural expression of ***different animal species*** are observed and interpreted. 1.2. Normal and abnormal animal traits are compared. 1.3. ***Defensive reaction*** of animals in response to capture and restraining is understood. 1.4. ***Risks*** associated with handling and restraining of animal are identified and safety procedures are followed
2. perform capturing of animals	2.1. Appropriate ***capturing*** materials and equipment are selected and prepared for use. 2.2. ***OHS and emergency procedures*** are followed. 2.3. Animals are captured in a ***safe and humane manner following standard guidelines***
3. carryout animal restraining activities	3.1. Appropriate restraining materials and equipment are selected and prepared for use. 3.2. Appropriate restraining techniques are performed according to the species and condition of the animal. 3.3. ***Physical restraining*** techniques are conducted carefully in a way free of ***stress*** or injury. 3.4. ***Chemical restraints*** are used as restraints as of their appropriateness. 3.5. ***Verbal restraints*** are used where required 3.6. ***Measures*** are taken based on the capturing and restraining objectives of the enterprise. 3.7. ***Protocols and procedures*** for capture and restrain including animal welfare requirements are followed under supervision.

Variable	Range
Different animal species	May include, but not limited to: • Ruminants (cattle, sheep and goats) • Equines • Camel • Swine • Pets

	• Wild animals
Defensive reaction	May include, but not limited to: • Escape, biting, kicking, goring, scratching
Risks	May include escape • Bite, kick, horning, step over by aggressive animal • Possible zoonosis
capturing	May include, but not limited to: • A hood, • Separation from a group, • Enticement devices,
OHS and emergency procedures	May include, but not limited to: • Animal care for farm and pet animals has a range of associated risks from bites, butting, kicks or scratches. All duties should reflect an awareness of and a respect for these risks. • The handling of chemicals and drugs requires extra care to ensure safe work practices are maintained. • Safe work practices are used in packaging and handling loads including animals and equipment. • Appropriate safe handling techniques are used to reduce muscle load on exertion. • Farm and pet animal facilities expose personnel to risks such as zoonoses, release of infective agents (both animal and human) and chemical or drug spillage. • Procedures to reduce the spread of disease may include incident reporting, cleaning, removal of waste and spillage, containment or elimination of risk, • PPE and seeking advice from supervisor. • Emergency procedures would relate to the potential escape of an animal or injury to target animals, other animals, staff and potentially the public.
Safe and humane manner	May include, but not limited to: • Appropriate use of restraints for animals, • Observing minimum stress to the animal, • Considering animals' welfare at all times.
Physical restraint	May include, but not limited to: • Catch poles, nets, ropes, bags, crushes, mouth gag, nose twitch, chemical restraint, visual barriers, leads, chains, collars and head halters.
Chemical restraint	May include, but not limited to: • Sedatives and tranquilazers like Azaperone, Xylazine, Chloral Hydrate, Guaifenesin, Acepromazine, Ketamine.
verbal restraint	Calming words, calling animals by their names
Measures	May include, but not limited to: Transportation, vaccination, Castration, milking, dehorning, shearing, drug administration, etc

Protocols and procedures	May include, but not limited to: • International Air Transport Association (IATA) shipment requirements and protocols, • Container requirements and transportation, • Diagnosis and treatment methods and or standards and • Food and water requirements for specific species.
Restraining tools & equipment	May include, but not limited to: • Catch poles, nets, ropes, bags, crushes, mouth gag, nose twitch, chemical restraint, visual barriers, leads, chains, collars and head halters.
Stress	May include trembling, vocalisation and being off feed or docile.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Compare normal and abnormal animal behaviours. • Select the appropriate technique and equipment to capture and restrain a range of animal species. • Capture and restrain selected animals safely and humanely • Communicate effectively with clients in respect to animals' transportation and initial settling in requirements
Required Knowledge and Attitude	Develop knowledge on: • Organisational guidelines and procedures, including OHS and emergency procedures • Relevant legislation, including animal welfare and ethics • Behaviour and physiology of animals • Appropriate capture and restraint methods for different animals • Capture and restraint equipment • Species compatibility
Required Skills	Demonstrate skills to: • Capture and restrain animals appropriately • Use safe and humane handling techniques • Maintain tools and equipment in accordance with manufacturers' specifications • Complete arithmetic calculations • Interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level I	
Unit Title	**Identify Sick Animals**
Unit Code	**AGR ANH1 04 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to develop understanding of Normal Animal Health Indicators which can help in the identification and record of signs and symptoms of sick animals. It also covers differentiating between health and sick animals using basic diseases symptoms and behavioural changes that help for health management and keeping them in isolation pen with the corresponding holder.

Element	Performance Criteria
1. Develop Understanding of Normal Animal Health Indicators	1.1. Physical appearance, ***body conformation***, and natural behavioural expression of animals are identified 1.2. Normal feed intake and drinking behaviour of animals are identified. 1.3. Identify change in colour, volume, frequency and consistence of secretion and excretion from natural body orifice.
2. Identify signs and symptoms of sick Animals	2.1. Changes to physical appearance, abnormal feeding and drinking behaviour are identified following standard OHS procedures. 2.2. ***Signs and symptoms of sick animals*** indicting the presence of disease, injury, compromised health or distress in animals are identified.
3. Isolate sick animals and report the problem	3.1. Sick/abnormal animals are isolated following standard OHS procedures and in accordance with organizational rules. 3.2. Information related to the health condition and identified problem of animal recorded and reported promptly to the immediate supervisor.

Variable	Range
Body conformation	May include, but not limited to: • Animals' normal standing position, • Normal locomotion and gait
Signs and symptoms of sick animals	may include but not limited to • Breathing, • Abdominal size (normal or distension) • Appetite, • Body condition, • Hair coat • Changes in gait (circling, lameness), • Depression/excitation, • Restlessness, • Grunting, • Fever/shock, • Changes in urine and faecescolour,

	• Excessive salivation, • Inappetence /anorexia, abnormal appetite(pica), • Teeth grinding, • Itching, • Coughing, • Raised hair coat, • Dried muzzle

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and attitude to: • Identify normal physical appearance of animal in motion and at rest • Describe changes in feed intake and drinking • Identify signs and symptoms of sick animals • Record, document and report in standard format and procedure.
Required Knowledge and Attitude	Demonstrate knowledge and attitude of: • Natural behaviour of animals • Normal appetite and drinking frequency of animals • Normal defecation and urination frequency with their color and texture • Distinguishing between sick and healthy animals Approaching animal from a distance.
Required Skills	Demonstrate skills in: • Oral communication skills required to fulfil the job role as specified by the organization including questioning, active listening, asking for clarification and providing advice to owner. • Interpersonal skills to recognize diseased and healthy animal
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level I	
Unit Title	**Provide Basic Health Care for Animals**
Unit Code	**AGR ANH1 05 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to provide care service for sick, pregnant, lactating and anew-born animals. It requires a regular follow up and identify sign of ill health, sign of approaching parturition , assess the condition of new-born and perform resuscitation activity, disinfection of navel, feeding of colostrum and care for new-born animals.

Element	Performance Criteria
1. Provide basic health care for sick animals	1.1. Basic and Suitable ***accommodation*** is provided for sick animals. 1.2. Sick animals are accessed for essential feed and water based on the recommendation duty of veterinarian. 1.3. Sick animals and their accommodations are maintained hygienic to prevent aggravation of injury/heath problem.
2. Provide care for pregnant Animals	2.1. ***Hazards*** associated with antenatal care provision are identified and reported to supervisors. 2.2. A **clean**, ***safe and secure environment/*** separate shelter is maintained for pregnant animals to give birth in severe weather conditions according to organizational guideline and as directed by the supervisor 2.3. ***Animal records*** are checked and the stage of gestation is confirmed where possible. 2.4. Adequate nutrition and supplementary feed is provided to pregnant animals as instructed, and recorded accordingly 2.5. ***The condition and health status*** of pregnant animals is observed and animals experiencing any ***parturition abnormality*** are recorded and reported to the supervisor 2.6. Signs of approaching birth in ***animals*** are identified. 2.7. ***Birthing equipment, resources and materials*** are checked and prepared for use.
3. Provide care for lactating animals	3.1. Post-birthing health and bonding of dam and new-born are monitored and any abnormality reported to the supervisor 3.2. Clean and comfortable area is provided for lactating animals as directed by the supervisor. 3.3. Appropriate and sufficient food and clean water are provided for lactating animal as instructed 3.4. Milking is carried out in a ***clean manner*** following the organizational procedure to minimize contamination and reduce incidence of mastitis. 3.5. The condition and health status of lactating animals are observed and any abnormalities are recorded and reported to the supervisor
4. Provide care for new-born Animals	4.1. OHS procedures associated with ***postnatal*** care provision are followed.

	4.2. New-born ***resuscitation*** is carried out as required and according to the organizational guideline under direct supervision. 4.3. ***Disinfection of navel*** is performed using appropriate disinfectants according to the organizational guideline and protocol under direct supervision. 4.4. Colostrum is collected and fed to the new born within the appropriate time period, as directed by the supervisor and according to the organizational guideline. 4.5. New-born animals are checked regularly after administration of colostrum and ***colostrum feeds*** repeated as required 4.6. Clean, safe and secure housing environment is provided according to the enterprise guideline. 4.7. Prevention from hypothermia by ***maintaining an appropriately warm environmental temperature*** in new born care areas is carried out. 4.8. Relationship between mother and young is monitored where appropriate and strategies are consulted with supervisor to address any problems. 4.9. Feeding, water and shelter areas are maintained and monitored for correct operation, cleanliness and hygiene. 4.10. Routine health and feeding problems, including digestive upsets and infections, are identified, recorded and reported to the vet.

Variable	**Range**
Accommodation	Include and not limited • Housing • Bedding • Feeding and watering through • Light and ventilation
Hazards	May include, but not limited to: • Exposure to dust, noise, airborne micro-organisms, • Slippery surfaces, obstacles, tripping hazards, • Fumes and cleaning chemicals and agents, • Physical hazards from animals, • Natural poisonous gases and allergens. • The sanitation, the comfort and defence from predators Burn or bury Hazards may also relate to zoonotic diseases like brucellosis
Clean, safe and secure environment	May include, but not limited to: • Regularly sanitized animal barn, • Comfortable bedding • Non-slippery floor • Well ventilated room and secured from predators
	May include, but not limited to:

Animal records	• Breeding records (insemination date, calving date, calving interval...), pregnancy test
The condition and health status	May include, but not limited to: • Pregnant animals in: ➢ The body condition in relation to the gestation period ➢ Feeding behavior ➢ Sign of abortion and or any sign of ill health • Lactating in: ➢ Body condition ➢ Feeding Behavior ➢ Animal posture ➢ Any Sign of ill health (mainly signs related to major diseases of the post-partum animal e.g. Hypocalcaemia, hypoglycemia, mastitis....) • Occurrence of Uterine prolapse, Retained fetal membrane, uterine infection • New born
Parturition abnormality	May include, but not limited to: • Difficult birth (Dystocia) • Still birth • Prolapse (uterine or vaginal) • Retained fetal membrane) • Bleeding • Abortion • Extended gestation period
Animals	May include, but not limited to: • Sheep, goat, cattle, camel, swine, equine, companion animals and/or their new-born.
Birthing equipment, resources and materials	May include, but not limited to: • PPE: arm length glove, overall, apron, boot, hat • Obstetrical kit • Scissor, blade, forceps, suture material, gauze, cotton, towel, • Tincture of iodine, savlone, saline water
Clean manner	May include, but not limited to: • Personal hygiene of milker • Clean and disinfected udder • Clean and disinfected milking equipment
Resuscitation	May include, but not limited to: • support a new-born animal having difficulties of birthing immediately after birth
Disinfection of navel	May include, but not limited to:

	• Handling of the new-born • Use of appropriate chemical for disinfection • Cutting and tying of navel • Cleaning and application of disinfectant
Colostrum feeding	May include, but not limited to: • By suckling directly from the dam or • Hand fed colostrum collected directly from the dam or by using stored colostrum.
Facilities, equipment and supplies	May include, but not limited to: • Separate birthing/calving pen or area • Rope • Drenching gun, disinfection cup, • Colostrum • Bedding
maintaining an appropriately warm environmental temperature	May include, but not limited to: • immediately drying the neonate, and then swaddling full-term neonates • placing premature infants in a polyethylene bag • covering the new-born with blanket • apply bedding to the floor of new-born house

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skill to: • Monitor animal condition and recognize abnormal behaviors, and signs of ill health in pregnant, parturient and lactating animals • Prepare clean, safe and secure environment to pregnant, parturient and lactating animals as directed • Provide a non-threatening environment and access to adequate feed and water for pregnant, parturient and immediately post birthing. • Select and prepare birthing equipment and materials • Identify hazards and risks related with handling new born • Identify and humanely handle new-born animals • Assess condition and recognize signs of stress or ill health in new-born animals • Handle resuscitation, navel disinfection, maintain an appropriately warm environmental temperature and colostrum feeding activities for the new born.
Required Knowledge and Attitude	Demonstrate knowledge of: • Relevant animal behavior, basic health and nutritional requirements for pregnant, parturient and new borns

	• Birthing equipment and materials, their components and functions • Effects of inadequate nutrition on animals and new-born • Hazards associated with handling animals • Relevant livestock gestation and appropriate birthing and husbandry procedures • PPE clothing and equipment and when and how it should be used • Problems associated with birthing • Procedures for cleaning and maintaining treatment equipment and materials • New-born animals development, growth, feed, shelter and environmental requirements • Recognize signs of stress or ill health in new-born animals • Significance of colostrum to livestock • Relevant legislation, regulations and codes of practice with regard to work health and safety and animal welfare.
Required Skills	Demonstrate skills to: • Prepare materials, tools and equipment for animal care and birthing activities • Undertake cleaning activities as directed • Maintain clean and secure environment for pregnant, parturient and lactating animals • Read and follow organizational policies and procedures including OHS; follow sequenced written instructions; and record information accurately and legibly • Weigh and assess condition of new-born animals
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard : **Animal Health Level I**	
Unit Title	**Apply Agricultural Extension Service**
Unit Code	**AGR ANH1 06 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to understand the Concept and evolution of agricultural Extension, apply extension methods and Approaches, apply Agricultural extension Communication and facilitation for technology promotion, Conduct training and record and document data.

Element	Performance Criteria
1. Understand the Concept and evolution of Agricultural Extension	1.1 The ***concept of Agricultural extension*** is understood to gain relevant knowledge 1.2 The ***evolution and progress of agricultural extension*** is expressed to understand the concept of Agricultural Extension 1.3 The ***role of extension*** in agricultural development is understood to deliver effective extension services 1.4 The ***importance of Agricultural extension*** is determined to have appropriate knowledge, 1.5 ***Extension planning*** is understood to determine extension activities
2. Apply Extension methods and Approaches	2.1. ***Extension methods*** are understood to provide Extension services based on organizational standard, extension systems, extension strategy and extension guide lines 2.2. ***Extension approaches*** are understood for implementation of extension services 2.3. The ***importance of extension methods and approaches*** are understood for Agricultural extension service delivery 2.4. Appropriate extension methods and approaches are applied to transfer agricultural technologies, based on organizational standard, extension systems, extension strategy and extension guide lines,
3. Apply Agricultural Extension Communication and Facilitation for technology promotion	3.1. The concept**,** ***principle*** and ***type of communication*** is understood to have good extension communication knowledge & skill 3.2. ***Communication barriers*** are identified, understood and solved to undertake effective communication 3.3. ***Elements of extension communication*** are defined and used to create positive environment for communication 3.4. ***Audio visual techniques*** are understood to provide Agricultural Extension and communication delivery services 3.5. ***Roles*** and ***characteristics of extension communicator*** are recommended to improve the communicator's performance 3.6. The ***basic concept of facilitation*** is understood to improve facilitation skills 3.7. The ***roles and responsibilities of a facilitator*** is applied to progress facilitation skills 3.8. Conflict resolution skill is understood to enhance homogeneity 3.9. The ***skills of a facilitator*** are applied for communication & technology promotion
4. Conduct Training	4.1. ***Need assessment*** is conducted to provide appropriate training 4.2. ***Preparation*** is carried-out to facilitate the training process 4.3. Implementation is conducted to capacitate trainees based on organizational training guide line 4.4. ***Evaluation is carried-out*** to understand the outcome
5. Record and	5.1 ***Data collecting formats*** are developed

Document Data	5.2 Appropriate data are collected and organized 5.3 Collected and organized data are documented and ***reported***

Variable	**Range**
Concept of Agricultural Extension	May include but not limited to: • Definition of agricultural extension • Purpose of agricultural extension
Evolution and progress of agricultural extension	May include but not limited to: • National Agricultural Extension systems • Related reading materials • Professionals • Electronic mail • Briefing notes • Journal articles • Code of conduct
Role of extension	May include but not limited to: • Situation analysis • Awareness creation • Training • Facilitation • Demonstrations • Field day exchange visit • Establish farmers group • Link farmers with relevant stakeholders • Monitoring and evaluation • Experience sharing • Assist and provide extension services for farmers • Organize farmer to farmer learning • Promotion of Agricultural Technologies
Importance of Agricultural extension	May include but not limited to; • Identify problem • Find solution • Bring behavioural change • Transfer of technology • Assist farmers to help themselves • Improve livelihood
Extension planning	May include but not limited to: • Conduct survey • Identification of activities • Data collection • Development of formats • develop the plan

Extension methods	May include but not limited to: • Individual • Group • Mass
Extension approaches	May include but not limited to: • Participatory • Pluralistic • Farmers field school • Pastoral field school • Mobile extension • Model village • Cluster approaches • Scaling/up/out/down • Market oriented extension
Importance of extension methods and approaches	May include but not limited to: • Information and technology dissemination • Deliver extension message effectively • Increase knowledge of farmers • Bring attitude change • Formation of opinion • Encourage farmers to raise issues • To get/provide possible alternative solutions • information and knowledge sharing
Type of communication	May include but not limited: • Intra personal communication • Inter personal communication • Organizational communication
Principles of communication	May include but not limited to: • Awareness creation • Designed message with respect to objectives and respective audience • Message content should suite to the target audience
Communication barriers	May include but not limited to: • The use of jargons words/terms • Cultural differences • Lack of attention, interest, distractions • Differences in perception and viewpoint • Physical disabilities • Physical barriers to non-verbal communication • Language differences and the difficulty in understanding unfamiliar accents • Expectations and prejudices • Emotional barriers and taboos

Elements of extension communication	May include but not limited to: • Source • Sender • Message • Channel • Receiver • Feedback
Audio visual techniques	May include but not limited to: • Audio visual aids • Assembling • Character • Advantages • Uses
Characteristics of extension communicator	May include but not limited to: • Confident • Friendly/ welcoming • Observant • Appreciative • Respectful • Organized • Good judgment • Consistent • Honest • Pro-active
Role of extension communicator	May include but not limited to: • Create motivation and feeling • Be aware of problem of the local people • Priority of direct needs • Create self-belief in rural people • Emphasis on self-depend aces • Change in social attitude • Rebuilding of the village • Full uses of local resources • Develop close relationships with stakeholders
Basic concept of facilitation	May include but not limited to: • Definition of facilitation • Purpose of facilitation • Evolution and progress of facilitation

Role and responsibility of facilitator	May include but not limited to: • Does not evaluate group ideas • Helps the group focus its energies on a task • Suggests methods and procedures • Protects all members of the group from attack • Helps find win/win solutions • Makes sure that everyone has the opportunity to participate • Periodically summarizes the group consensus on issues to validate and clarify the progress of the discussion • Encouraging of every one's knowledge
Conflict resolution skill	May include but not limited to: • Recognize • Resolve conflicting needs • Relieve stress • Recognize and manage emotions • Improve nonverbal communication skills • Use humor and play to deal with challenges
Skill of facilitator	May include but not limited to: • Active Listening • Summarizing • Synthesis • Conflict resolution
Need assessment	May include but not limited to: • Identification of areas • Selection of respondents • Preparation of tools • Conduct the assessment • Organize data
Preparation	May include but not limited to: • Identify trainees and trainers • Organize logistics • Select Venue • Selecting and organize training materials • Select and Organize training aids • Prepare schedule and others • Implement
Evaluation	May include but not limited to: • Preparation of evaluating formats • Identify sample • Conduct evaluation • Organize result • Report • Plan the lesson learnt

Data collecting formats	May include but not limited to: • Recording formats • Writing formats
Reporting	May include but not limited: • Organizing • Writing • Submitting/transfer

Evidence Guide	
Critical Aspects of Competence	Demonstrates knowledge and skill to : • Identify and interpret the role of Agricultural Extension • Apply Extension method and Approaches • Develop Extension planning • Perform Conflict resolution • collect, record, organize and document data
Required Knowledge and Attitudes	Demonstrates knowledge and attitude of : • Agricultural extension • Conflict resolution • Extension method and Approaches • Agricultural Extension Communication and Facilitation • collecting, recording, organizing and documenting of data
Required Skills	Demonstrates skills to: • Resolve conflict • Develop Extension planning • Apply extension method and Approaches • Facilitate Agricultural Extension Communication
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and Occupational health and safety (OHS) practices.
Methods of Assessment	Competence may be assessed through: • Written Test, Interview, quiz, practical assignment • Observation, Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level I	
Unit Title	**Implement Agribusiness Marketing**
Unit Code	**AGR ANH1 07 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to Understand concept of agricultural marketing Understand concepts of agribusiness Identify marketing targets for Agricultural products Implement marketing strategy . Establish contract farming, and Apply Agricultural marketing services.

Element	Performance Criteria
1. Understand concept of agricultural marketing	1.1 ***.Concept of agricultural marketing*** is understood for Agricultural marketing 1.2 Importance of agricultural marketing is understood to provide agricultural marketing services 1.3 ***.Roles of*** **agricultural market**-oriented service is identified and understood 1.4 ***.Principles of agricultural marketing*** and strategies are identified and understood 1.5 ***Marketing mix*** is understood to implement agricultural marketing activities 1.6 ***Types of marketing*** are understood and identified to implement the appropriate marketing services
2. Understand concepts of agribusiness	2.1**.** ***Concept of agribusiness*** is understood for Agricultural marketing 2.2 Importance of agribusiness is understood to provide agribusiness services 2.3 ***Roles of agribusiness***-oriented service is identified and understood 2.4 ***Principles of agribusiness*** and strategies are identified and understood 2.5. **Characteristic of Agribusines**s are understood to implement Agribusiness 2.6. **Dimension** and s**tructures** of Agribusiness are understood and distinguished
3. Identify marketing targets for Agricultural products	3.1 .***Marketing targets*** are identified for Agricultural products and services 3.2 ***Approaches*** **of** ***agricultural market*** are understood for agricultural market product and service. 3.3 ***Segment descriptors*** are used to display the targets of agricultural market 3.4 ***Strategic of agricultural marketing options*** are identified to develop agricultural ***marketing plan*** 3.5 Business plans are prepared to perform cost and benefit analysis
Implement marketing strategy	4.1 .Agricultural marketing functions strategy is designed to perform agriculture business. 4.2 ***Action plan*** is developed to implement Agricultural marketing strategies**.** 4.3 .Require resource are identified and coordinated to implement agricultural marketing

	4.4 Marketing mix is implemented according to the strategy Agricultural.
Establish contract farming	5.1 Concept of ***contract farming*** is understood to enhance market oriented production 5.2 ***Types of contract farming*** are identified to select the appropriate approach 5.3 ***Models of Contract*** farming are understood and identified 5.4. Steps and procedures of contract farming establishments are identified 5.5 Contract farming ***requirements*** are identified and applied based on the organizational standard 5.6 Contract farming systems are established
6. Apply Agricultural marketing services	6.1 Agricultural products are identified to delivered provided marketing services 6.2 Need assessment is conducted to identify ***marketing conditions*** 6.3 ***Market strategies*** are developed to implement the Agricultural marketing services 6. 4Customer feedbacks are collected and organized to improve Agricultural marketing services 6.5 Data is organized and documented to report the appropriate body.

Variable	**Range**
Concept agricultural marketing	May include, but not limited to: • Needs • Product • Demand • Value • Transaction • Satisfaction and Quality • Exchange • Market
Roles marketing	May include but not limited to: • Determine price • Consumer choice • Increase efficiency • Improve scarcity
Principles agricultural marketing	May include but not limited to: • Product • Price • promotion

	• Place • People • Process
Marketing mix	• May include, but not limited to: • Price • Promotion • Place • Product
Types of marketing	May include, but not limited to • Perfect competitive • Monopoly • Oligopoly • Monopolistic
Concept of Agribusiness	May include, but are not limited to: • Agricultural impute supply • Farmer producer • Process of wholesaler • Distribution and retailer
Characteristic of Agribusiness	May include but not limited to: • Existence around production areas • Variety and size of Ag organization • Scale and type of competition • Conservativeness of Ag: • Decision making: • Community oriented business
Dimension	May include, but not limited to: • Agricultural sector and their interdependence • farm either private or government • Market oriented. • Dynamic sector and continuously meets current demands of consumers • Provides forward and backward linkages
Structures	May include but not limited to: • Input sector: • Farm/production sector: • Product sector:
Marketing targets	May include but not limited to: • Demographic • Geographic • Psychographic • Behaviours pattern
Marketing conditions	May include but not limited to: • Government • International transaction

	• Speculation and expectation • Supply and demand
AgriculturalMarket strategies	• May include, but not limited to: • Analyse agricultural market • Analyse competition • Define market mix • Determine position • Marketing budget • Execution plan understand potential customers
Approaches for agricultural market	• May include, but not limited to: • Functional • Institution • Commodity • Behavioural
Segment descriptors	• May include, but not limited to: • Demographic • Behavioural • Geographic • Psychographic
Marketing plans	• May include, but not limited to • Function of marketing • Market program • Achieve the market objectives
Action plan	• May include, but not limited to: • Resource • Budget • Times • Output
Contract farming	May include, but not limited to • Agreement between buyer and seller • Farmer and processing making firms for production • Supplies of agricultural product
Types of contract farming	May include, but not limited to • Market specifying • Recourse providing • Production management
Models of Contract	May include, but not limited to • Full model contract farming • Specific

Requirements	• Traceability • Site history and management • Propagation material • Soil/substrate management • Fertilizer use • Irrigation • Crop protection

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Understand Concept of agribusiness to apply agribusiness marketing • Identify Principles of agribusiness and strategies to implement Agribusiness marketing • Determine Agricultural Marketing targets for provide products and services • Develop Action plan to implement Agricultural marketing strategies**.** • Prepare Business plans to perform cost and benefit analysis • Apply marketing conditions to conducted Need assessment for products and service • Understand concept of contract farming to enhance market oriented production • Apply appropriate models to established contract farming • Contract farming requirement***s*** are identified and applied based on the organizational guide line • Established Contract farming systems based on the organizational standard
Required Knowledge and Attitude	Demonstrate knowledge of : • Principles of agricultural marketing to implement marketing strategy • Concept of agribusiness to apply agribusiness marketing • the roles of agribusiness to perform agricultural marketing. • Principles of agribusiness and strategies to implement Agribusiness marketing • Agricultural Marketing targets that provide products and services • Required resource to implement agricultural marketing • concept of contract farming to enhance market oriented production • appropriate models to established contract farming • Contract farming systems based on the organizational standard
Required Skills	Demonstrate Skills to : • Determine ***marketing options*** to design marketing plan • Implement Agricultural marketing strategies develop action plan • Identified Agricultural Marketing targets for provide products and services • Select ***Approaches*** of agricultural market to implement product and service. • ***Use segment descriptors*** to display the targets of agricultural market • Develop Action plan to implement Agricultural marketing strategies.

	• Prepare Business plans to perform cost and benefit analysis • Apply marketing conditions to conducted Need assessment for products and service • Organize customer feedbacks to improve Agricultural marketing services • Apply appropriate models to established contract farming • Contract farming requirement***s*** to applied based on the organizational guide line • Established Contract farming systems based on the organizational standard
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level I	
Unit Title	**Apply Basics of Human Nutrition Practices**
Unit Code	**AGR ANH1 08 0322**
Unit Descriptor	This unit covers the knowledge, skill and attitude required to categorize agricultural foods items, recognize malnutrition in the community, identify the role of agriculture in nutrition and contribute to the awareness creation of the community in utilization of agricultural products.

Element	Performance Criteria
1. Identify Categories of agricultural foods items	1.1. Basic ***terminologies and concepts*** in nutrition are identified and explained 1.2. ***Food groups, nutrient and their sources*** of balanced diet are identified and explained 1.3. ***Origin*** and composition of food stuffs are identified and described 1.4. ***Energy dense*** and ***nutrient dense*** food sources are identified and explained
2. Recognize malnutrition in the community	2.1. Physical signs of malnutrition are identified and explained 2.2. Forms, causes and consequences of ***malnutrition*** in different groups of community are identified 2.3. Measures to overcome malnutrition, importance of maintenance of adequate and balanced diet are promoted 2.4. Contribution is made in elders, family heads and women awareness creation programs
3. Identify the role of agriculture in nutrition	3.1. The role of agriculture as source of variety foods is recognized and promoted 3.2. The contribution of agriculture sector in nutrition sensitive intervention is described 3.3. ***Nutrition sensitive agricultural practices*** are identified and communicated as per the nutrition program guideline
4. Demonstrate diversified Agricultural food production and consumption techniques	4.1. Importance of diet diversification is identified and discussed with family holds and community according to the program guideline 4.2. Techniques of diversified food production are identified and demonstrated to farmers and family members 4.3. ***Techniques of enhancing*** the nutrient content of family foods are assessed and implemented according to the program guideline and

	cultural requirements of the rural community 4.4. Utensils are identified and cooking techniques demonstrated for specific agricultural products 4.5. PPE are selected and used in accordance to OHS requirement and code of ethics 4.6. Balanced and nutrient dense diet preparation is demonstrated using food stuff ingredients
5.Perform proper handling and storage of agricultural food products	5.1. Importance of ***hygiene*** for nutrition is explained 5.2. ***Storage facilities*** are identified and family holds supported in construction. 5.3. Agricultural products are ***safely handled and stored*** 5.4. Methods and techniques of safely handling and storing agricultural products are demonstrated in accordance products requirement
6.Document and report food production, consumption and difficulties	6.1. Diversified food production and consumption activities are documented 6.2. Difficulties happened in the processes are reported to the respective authorities.

Variable	**Range**
Terminologies and concepts	May include, but not limited to: • Food • Diet • Nutrient • Balanced Diet • Nutritious food • Hidden hunger • Malnutrition • Stunting • Underweight • Overweight • Nutrition • Diversification • Body growth • Body Development • Food fortification • Bioavailability • Food taboos • Window of opportunity • Fortification • Food security

	• Nutrition security • Small holder farmer • Cretinism
Food groups	May include, but not limited to: • Vegetables food group • Fruits food group • Legumes and nuts food group • Animal source food group • Fats oils and sweets food group • Staples food group
Nutrient and their sources	May include, but not limited to: • Carbohydrates • Lipids/Fats • Proteins • Minerals • Vitamins
Food origin	May include, but not limited to: • Animal • Plant
Energy dense	May include, but not limited to: • Calories • Nutrient
Nutrient dense	May include, but not limited to: • Vitamins • Minerals • Fibbers
Malnutrition	May include, but not limited to: • Under nutrition may be: ➢ stunting ➢ wasting ➢ underweight • Over nutrition may be: ➢ obesity ➢ overweight
Nutrition sensitive agricultural practices	May include, but not limited to: • Nutrition sensitive agricultural intervention • Diversification in: ➢ Production of fruits, vegetable, nutritious roots, cereals, pulse, and mushroom ➢ Animal source foods (Dairy, poultry, shoat, fish)
Techniques of enhancing	May include, but not limited to:

	• Fortification, • Germination, • Fermentation, • Roasting and Cooking
Hygiene	May include, but not limited to: • Food hygiene • Personal hygiene • Environmental hygiene
Storage facilities	May include, but not limited to: • Bins • Refrigerator • Shelf • Rack and Barn
Safely handling and storing	May include, but not limited to: • Sanitation • Ventilation

Evidence Guide	
Critical Aspects of Competence	Demonstrate knowledge and skills to: • Use utensils and prepare balanced nutrition • Distinguish and demonstrate energy dense and nutrients- dense foods and preparation techniques • Demonstrate food storing and preserving techniques • Explain the need for variety and diversification of foods • Explain agricultural food types, and sources • Describe forms, causes and consequences of excess or deficient intake of certain food types • Maintain personal hygiene to minimize risk to food product safety
Required Knowledge and Attitude	Demonstrate knowledge of: • Terminologies and concepts of nutrition • OHS requirements • Food groups and nutrient composition and diet requirement • Adequate and balanced diets • Agricultural food types, and sources • Need for variety and diversification of family diet with a variety of agricultural food products • Basic principles of producing quality/ nutritious agricultural products • Effect of food production and /or preparation on nutrient content of a variety of energy- dense and nutrients- dense foods • Child and maternal nutrition • Forms, causes and consequences of malnutrition • Basic food safety principles and requirements • Hygiene and food safety procedures

	• food safety recording requirements • Common hazards and sources of contamination in area of work • Legal and regulatory requirements pertaining to food production, storage, handling and packaging relevant to area of work • Personal hygiene practices and clothing requirements relevant to area of work.

Required Skills	Demonstrate skills to: • Categorize agricultural food items into major food groups based on their nutrient contents • Identify local varieties of animal and plant products, • Demonstrate production and /or preparation of nutrient rich diets • Communicate appropriate information with regard to diversified foods for pregnant women and children • Demonstrate various methods of integrated nutritious agricultural products production • Identify the consequences of excess or deficient intake of certain food types • Demonstrate how to enhance nutrient content using different food groups • Handle food .products to prevent damage, spoilage and waste • Identify hazards, contaminants and risks or control points • Document and report food safety hazards and risks to appropriate personnel • Store food products in appropriate areas at correct temperatures
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level I	
Unit Title	**Apply 5S Procedures**
Unit Code	**AGR ANH1 09 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to apply 5S techniques to his/her workplace. It covers responsibility for the day-to-day operations of the workplace and ensuring that continuous improvements of Kaizen elements are initiated and institutionalized.

Elements	Performance Criteria
1. Prepare for work.	1.1. Work instructions are used to determine job requirements, including method, material and equipment. 1.2. Job specifications are read and interpreted following working manual. 1.3. ***OHS requirements***, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work. 1.4. ***Tools and equipment*** are prepared and used to implement 5S. 1.5. ***Safety equipment and tools*** are identified and checked for safe and effective operation. 1.6. Kaizen Board (Visual Management Board) is prepared and used in harmony with different workplace contexts.
2. Sort items.	2.1. Plan is prepared to implement sorting activities. 2.2. Cleaning activities are performed. 2.3. All ***items*** in the workplace are identified following ***the appropriate procedures***. 2.4. Necessary and ***unnecessary items*** are listed using the ***appropriate format***. 2.5. ***Red tag*** strategy is used for unnecessary items. 2.6. Unnecessary items are evaluated and placed in an appropriate place other than the workplace. 2.7. ***Necessary items*** are recorded and quantified using appropriate format. 2.8. Performance results are reported using appropriate formats. 2.9. Necessary items are regularly checked in the workplace.
3. Set all items in order.	3.1. Plan is prepared to implement set in order activities. 3.2. General cleaning activities are performed. 3.3. Location/Layout, storage and indication methods for items are decided. 3.4. Necessary tools and equipment are prepared and used for setting in order activities. 3.5. Items are placed in their assigned locations. 3.6. After use, the items are immediately returned to their assigned locations. 3.7. Performance results are reported using appropriate formats.

	3.8. Each item is regularly checked in its assigned location and order.
4. Perform shine activities.	5.1. Plan is prepared to implement shine activities. 5.2. Necessary tools and equipment are prepared and used for shinning activities. 5.3. ***Shine activity*** is implemented using appropriate procedures. 5.4. Performance results are reported using appropriate formats. 5.5. Regular shining activities are conducted.
5. Standardize 5S.	6.1. Plan is prepared and used to standardize 5S activities. 6.2. ***Tools and techniques to standardize 5S*** are prepared and implemented based on ***relevant procedures***. 6.3. Checklists are followed for standardize activities and ***reported*** to ***relevant personnel***. 6.4. The workplace is kept to the specified standard. 6.5. Problems are avoided by standardizing activities.
6. Sustain 5S.	7.1. Plan is prepared and followed to sustain 5S activities. 7.2. Tools and techniques to sustain 5S are discussed, prepared and implemented based on relevant procedures. 7.3. Workplace is inspected regularly for compliance to specified standard and sustainability of 5S techniques. 7.4. Workplace is cleaned up after completion of job and before commencing next job or end of shift. 7.5. Situations are identified where compliance to standards is unlikely and actions specified in procedures are taken. 7.6. Improvements are recommended to lift the level of compliance in the workplace. 7.7. Checklists are followed to sustain activities and report to relevant personnel. 7.8. Problems are avoided by sustaining activities.

Variable	**Range**
OHS requirements	May include, but not limited to: • Legislation/Regulations/Codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices.

	• Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Tools and equipment	May include, but not limited to: • Paint • Hook • Sticker • Signboard • Nails • Shelves • Chip wood • Sponge • Broom • Pencil • Shadow board/Tools board
Safety equipment and tools	May include, but not limited to: • Dust masks/goggles • Glove • Working cloth • First aid and safety shoes
Items	May include, but not limited to: • Tools • Jigs/Fixtures • Materials/components • Machine and equipment • Manuals • Documents • Personal items (e.g. Bags, lunch boxes and posters) • Safety equipment and personal protective equipment • Other items which happen to be in the work area
The appropriate procedures	May include, but not limited to: • Steps for implementing 5S (sort, set in order and shine) activities. • Written, verbal and computer based or in some other format.
Unnecessary items	Are not needed for current production or administrative operation and include but not limited to: • Defective or excess quantities of small parts and inventory • Outdated or broken jigs and dies • Worn-out bits • Outdated or broken tools and inspection gear • Old rags and other cleaning supplies

	• Electrical equipment with broken cords • Outdated posters, signs, notices and memos • Some locations where unneeded items tend to accumulate • In rooms or areas not designated for any particular purpose • In corners next to entrances or exists • Along interior and exterior walls • Next to partitions and behind pillars • Under the eaves of warehouses • Under desks and shelves and in desk and cabinet drawers • Near the bottom of tall stacks of items • On unused management and production schedule boards • In tools boxes that are not clearly sorted
Appropriate format	May include, but not limited to: • All items, necessary and unnecessary items.
Red tag	A format prepared with a red color paper or card which is filled and attached temporarily on the unnecessary items until decision is made. The red tag catch people's attention because red is a color that stands out. So to fill and attach red tag on items, asks the following three questions: • Is this item needed? • If it is needed, is it needed in this quantity? • If it is needed, does it need to be located here?
Necessary items	Are required in the workplace for current production or administrative operation in the amount needed.

Shine activity	May include, but not limited to:
	• Inspection
	• Cleaning
	• Minor maintenance May include, but not limited to:
	  ➢ Tightening bolts
	  ➢ Lubrication and Replacing missing parts

Tools and techniques to standardize 5S	May include, but not limited to: • 5S Job Cycle Charts • Visual 5S • The Five Minute 5S • Standardization level checklist • 5S checklist • The five Whys and one How approach(5W1H) • Suspension • Incorporation and Use Elimination • 5S slogans • 5S posters • 5S photo exhibits and storyboards • 5S newsletter • 5S maps

	• 5S pocket manuals
	• 5S department/benchmarking tours
	• 5S months
	• 5S audit
	• Awarding system
	• Big cleaning day
	• Patrolling system May include, but not limited to:
	  ➢ Top management Patrol
	  ➢ 5S Committee members and Promotion office Patrol
	  ➢ Mutual patrol
	  ➢ Self-patrol
	• Checklist and Camera patrols

Relevant procedures	May include, but not limited to: • Assign 5S responsibilities • Integrate 5S duties into regular work duties • Check on 5S maintenance level • OHS measures such as signage, symbols / coding and labelling of workplace and equipment • Creating conditions to sustain your plans • Roles in implementation
Reporting	May include, but not limited to: • Verbal responses • Data entry into enterprise database • Brief written reports using enterprise report formats
Relevant personnel	May include, but not limited to: • Supervisors, managers and quality managers • Administrative, laboratory and production personnel • Internal/external contractors, customers and suppliers

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • Discuss how to organize KPT. • Describe the pillars of 5S. • Discuss the relationship between Kaizen elements. • Implement 5S in own workplace by following appropriate procedures and techniques.
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Kaizen principle, pillars and concept • Key characteristic of Kaizen • Elements of Kaizen • Wastes/MUDA • Basics of KPT • Aims, benefits and principles of KPT

	• Stages of KPT • Structure and role of the components of Junior KPT • Concept and parts of Kaizen board • Concept and benefits of 5S • The pillars of 5S • Three stages of5S application • Benefits and procedure of sorting activities • The concept and application of Red Tag strategy • Relevant Occupational Health and Safety (OHS) and environment requirements • Benefits and procedure of set in order activities • Set in order methods/techniques • Benefits and procedure of shine activities • Inspection methods • Planning and reporting methods • Method of Communication • Benefits of standardizing and sustaining 5S • Tools and techniques to sustain 5S • Ways to improve Kaizen elements • Benefits of improving kaizen elements • Relationship between Kaizen elements
Underpinning Skills	Demonstrates skills of: • Participating actively in KPT • Technical drawing • Communication skills • Planning and reporting own tasks in implementation of 5S • Following procedures to implement 5S in own workplace • Using sorting formats to identify necessary and unnecessary items • Improving workplace layout following work procedures • Preparing labels, slogans, etc. • Reading and interpreting documents • Observing situations • Gathering evidence by using different means • Recording activities and results using prescribed formats • Working with others • Solving problems by applying 5S • Preparing and using kaizen board • Preparing and using tools and equipment to implement and sustain 5S • Improving Kaizen elements by applying 5S • Standardizing and sustaining procedures and techniques to avoid problems • Procedures to standardizing 5S activities

	• Analyzing and preparing shop layout of the workplace • Standardizing and sustaining checklists
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Level II

Occupational Standard: Animal Health Level II	
Unit Title	**Identify basic Anatomy and Physiology of Animals**
Unit Code	**AGR ANH2 01 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to identify basic anatomy and physiology of animals and their clinical applicability at work place. It includes knowledge of understanding of normal structures and functions of different organs and systems, and also skills to locate organs in different body systems as well as their clinical application at work place.

Element	Performance Criteria
1. Identify the structures and function of main body systems	1.1. The science of veterinary anatomy and physiology are defined and described. 1.2. The different ***Planes of reference*** of the body are identified. 1.3. Appropriate ***directional terms*** are used in the description of locations of body parts. 1.4. Structure and function the ***integumentary system*** are identified and recognized in ***different animal species*** 1.5. Structure and function of ***musculo-skeletal system*** with their respective locations are recognized in different animal species. 1.6. Structure and function of the ***digestive system,*** the accessory digestive organs in both ***simple stomach*** and ***complex stomach animal*** are identified with their respective locations, are identified 1.7. Structure and function of the ***respiratory system*** with their respective locations are identified in different species. 1.8. Structure and function of the ***circulatory system*** with their respective locations are identified in different species of animals. 1.9. Structure and function of the ***uro-genital system*** including mammary gland with their respective locations are identified. 1.10. Structure and function of the ***endocrinal system*** are identified and described for different animal species. 1.11. Structure and function of the ***nervous system*** are identified and recognized in different animal species
2. Identify clinically important structure of animal body	2.1. Muscles involved on meat inspection and administration of drugs in different animal species are identified. 2.2. Muscles involved in respiration are identified. 2.3. The relative locations of organs used for ***external clinical diagnosis*** and application of treatment during ***ill health*** are identified.

	2.4. The locations of blood vessels used in blood sample collection and drug administration; for different animal species, are identified. 2.5. The clinical importance and locations of lymph nodes are identified. 2.6. Appropriate sites for shoeing, hoof trimming and dehorning are identified. 2.7. The location of sciatic nerve is identified and its importance during drug administration is recognized. 2.8. The location of the spermatic cord and its importance during castration is recognized
3. Identify the structures and function of main body systems in avian	3.1. Structure and function the integumentary system are identified and recognized in avian species. 3.2. Structure and function of musculo-skeletal system with their respective locations are recognized in avian species. 3.3. Structure and function of the digestive system, the accessory digestive organs in avian are identified. 3.4. Structure and function of the circulatory system with their respective locations are identified in avian species. 3.5. Structure and function of the uro-genital system with their respective locations in avian are identified.

Variable	**Range**
Planes of reference	May include, but not limited to: • Median, saggital, frontal and transverse plane
Directional terms	May include, but not limited to: • Like cranial, caudal, dorsal, ventral, proximal, distal, palmar, plantar etc
Integumentary system	May include, but not limited to: • Skin • Wool • Hooves • Horns
Different animal species	May include, but not limited to: • Ruminants (cattle, sheep and goats) • Equines • Camel • Swine • Poultry
Components of Musculo-skeletal system	May include but not limited to • Skeleton (Axial skeleton, appendicular skeleton and visceral skeleton). • Cartilage, Ligaments, Tendons

	• Joints • Muscle (skeletal, smooth, cardiac muscles).
Components of the digestive system	May include, but not limited to: • Oral cavity, pharynx, esophagus, gizzard, ruminant and non ruminant stomach, small intestine, large intestine, cloaca, pancreas, and liver.
Components of the respiratory system	May include, but not limited to: • Nasal cavity, pharynx, larynx, trachea, bronchial tree, lung, pleura
Components of the circulatory system	May include, but not limited to: but not limited to • Blood circulation and lymphatic circulation • Heart, artery, vein, lymphatic vessel, capillary, blood, lymph. • Blood vessels which are important for drug administration and sample collection include jugular vein, radial, ear, coccygeal, saphenous, cephalic etc
Components of the uro-genital system	May include, but not limited to: • In female it includes ovary, oviduct, uterus cervix, vagina, vestibule mammary gland and • In males testes, epididymis, vas deferens, accessory sex glands, urethra. • Urinary system includes kidneys, ureter, and bladder. • Clinical conditions include calculi, prolapse, phymosis, paraphymosis, etc
Components of the endocrinal system	May include, but not limited to: • Pituitary gland • Thyroid gland • Parathyroid gland • Adrenal gland • Pancreas • Liver • Sebaceous gland and salivary gland
Components of the nervous system	May include but not limited to: • Central nervous system • Peripheral nervous system • Autonomic nervous system
Simple stomach animals	May include but not limited to: • Horses, swine, poultry
Complex stomach animals	May include, but not limited to: • Ruminants (cattle, sheep and goats) and camels
External clinical diagnosis	May include but not limited to • Internal organs like the rumen, heart, lung, uterus, intestine
Ill health	May include but not limited to: • Bloat, carbohydrate engorgement, uterine infection, dystocia, distension of the urinary bladder

Evidence Guide

Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Describe different planes of the body and describe directional terms. • Identify different organs and structures of animal body at species level • Locate the relative positions of animal body structures • Describe the normal functions of different body parts • Apply knowledge and skill of anatomical structures for different clinical activities and meat inspection
Required Knowledge and Attitude	Demonstrate knowledge of: • Identify and categorize components of the body in relation to each system. • Location of body parts with respective terms. • Functions of organs in each system. • Relation between organ systems.
Required Skills	Demonstrate skills to: • Locate sites of clinically important arteries, veins, nerves, muscles and lymph nodes • Indicate location and position of visceral organs • Differentiate normal structures/organs • Indicate appropriate sites of trocarization, shoeing, dehorning, castration and other related activities • Interpersonal skills to relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities • Oral communication skills required to fulfill the job role as specified by the clinic including negotiating and questioning techniques, active listening, asking for clarification from veterinarian, acknowledging and responding to a range of views • Use problem-solving skills to use available resources prioritize tasks and use appropriate pain management techniques.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level II	
Unit Title	**Identify Pathological Lesions**
Unit Code	**AGR ANH2 02 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to identify gross pathological lesions and used in the diagnosis of wide range of animal health disorders.

Element	Performance Criteria
1. Identify gross pathological lesions and terminologies	1.1. Concepts of pathology are described. 1.2. Associated technical ***pathological terminologies*** are clearly identified. 1.3. Changes indicative of cell damage including degeneration and ***necrosis*** are identified. 1.4. Gross pathological lesions that can be detected on ante mortem animals are mentioned and described. 1.5. ***Gross pathological lesions*** that can be detected on post mortem animals are mentioned and described.
2. Identify inflammatory reactions and exudates	2.1. The definition of inflammation and causes of inflammatory reactions in animal body are described. 2.2. ***Mediators*** and ***actors of inflammation*** are mentioned and described. 2.3. ***Cardinal signs*** of inflammation are identified and described. 2.4. Clinically important inflammatory lesions are mentioned. 2.5. Types and consequences of inflammation are explained. 2.6. Development of oedema, abscess and respiratory discharges are described
3. Identify basic circulatory pathological disorders	3.1. ***Causes*** and ***consequences of Impaired blood*** supply to tissues/ organs are identified and described 3.2. Pathologies associated with **circulatory disturbances** are mentioned and described. 3.3. General cause for the development of congestion and jaundice/icterus are identified 3.4. ***Types and causes of shock*** are mentioned.
4. Recognize Growth disorder	4.1. ***Congenital defects*** of the different body systems will be clearly seen 4.2. All ***adaptive changes*** in cells which help the cell to cope with an alteration in its environment are identified 4.3. The common types of ***neoplasia*** occurring in animals are identified and described 4.4. The characteristics and classification of most commonly prevalent cases of neoplasia are identified and described

Variable	Range

Pathological terminologies	May include, but not limited to: • Pathology • pathogenesis • Aetiology • Inflammation • Oedema • Jaundice • necrosis • Tumour • Cancer
Types of Necrosis	May include, but not limited to: • Coagulative necrosis • Liquefactive necrosis • Caseation necrosis
Gross pathological lesions	May include, but not limited to: • Swelling • Shrinkage • Bruising • Wound • Discharge • Breakage • Discoloration
Mediators of inflammation	May include, but not limited to: • Histamine • Cytokines • Complements • Interleukin
Actors of inflammation	May include, but not limited to: • Neutrophils • Macrophages • Monocytes • B-cells
Cardinal signs of acute inflammation	May include, but not limited to: • Heat, Redness, swelling, pain and loss of function
Causes of impaired Blood supply	May include, but not limited to: • Thrombosis • Embolism • Vasoconstriction
Consequences of impaired blood supply	May include, but not limited to: • Ischemia • Infarction • Shock • Necrosis
Consequences of circulatory disturbances	May include, but not limited to: • Thrombosis, • Embolism • Vasoconstriction • Jaundice/icterus • Hyperaemia • Congestion

Types of shock	• hypovolemic shock • Cardiogenic shock • Ischemic shock
Congenital defects	May include, but not limited to: • Absence (aplasia) of body parts, atresia coli and ani, monsters, megalo-cephala, hydrocephalus ...
Adaptive changes	May include, but not limited to: • Atrophy • Hypertrophy • Hyperplasia • Metaplasia
Neoplasia	May include, but not limited to: • This are either benign (localized)(papilloma, fibroma, sarcoma) or malignant (systemic) (cancer)

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Gross pathological lesions of animal diseases • Cardinal signs of inflammation • Names of inflammatory lesions for different tissues • Circulatory disturbances and its sequels • Oedema • Types and causes of shock • Growth disorders
Required Knowledge and Attitude	Demonstrate knowledge of: • Basic terminologies for lesion identification • Abnormal pathological changes or lesions of animal bodies • Pathogenesis and path physiology of diseases • Understand gross pathological lesions of animal diseases • Mention cardinal signs of inflammation • Mention names of inflammatory lesions for different tissues • Describe circulatory disturbances and its sequels • Explain causes and types oedema • Types and causes of shock • Understanding of growth disorders
Required Skills	Demonstrate skills to: • Use technical terms • Identify pathological changes of body parts • Detect congenital abnormalities • Identify gross pathological lesions of animal diseases • Identify cardinal signs of inflammation • Identification of inflammatory lesions for different tissues • Identification and prevention of circulatory disturbances and its sequel • Identification and explaining of oedema • Recognizing causes of shock and handling • Identification of growth disorders

Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level II	
Unit Title	**Carryout General Clinical Examination of Animals**
Unit Code	**AGR ANH2 03 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to undertake general physical examination of animals and identify signs of ill health or injury in animals. It also covers defined range of skills to compile patient (animal) and client (animal owner) histories, maintain records and consult the veterinarian as required

Element	Performance Criteria
1. Carry out reception duties	1.1. Clients are received courteously according to workplace guideline 1.2. ***Owner*** and ***patient animal information*** is taken 1.3. Existing client and ***patient histories*** are identified and retrieved from clinic records. 1.4. New client and p8atient records are established if required. 1.5. Patient admission and discharge documentation are promptly and efficiently completed.
2. Conduct general examination of animals	2.1. Tools and equipment used for measurement are collected and check-up for functionality 2.2. Appropriate restraints are used to hold patients for examination in line with clinic procedures. 2.3. Distant examination on the general condition and health of animal are checked and recorded on standardized case paper/book. 2.4. ***Abnormal animal behaviour and conditions*** are recognized. 2.5. Physiological parameters /***vital signs*** are taken and recorded in line with clinical diagnosis procedure. 2.6. Close ***Physical examination*** is carried out according to the standard procedure.
3. Record and report finding of the examination	3.1. Sick or injured animals are isolated from other animals, as required, and cared for in accordance with supervisor or veterinary advice 3.2. ***Signs of illness or injury*** are recognized and reported 3.3. Animals that are ill or injured are summited for further investigation and clinical support.

Variable	Range
Owner information	• May include, but not limited to: • Residential area (line no. kebele, wereda, .)
Patient animal information	May include, but not limited to: • Species, sex, age, breed, colour, body weight)
patient histories	May include, but not limited to: • Immediate /present history • Past history • Environmental history (include management histories like feeding,

	watering, housing)
Abnormal animal behaviour and conditions	May include, but not limited to: • Distress, frenzy, anorexic, restlessness, fight, fright, abnormal appetite, weakness, lagging behind the herd, unable to walk
vital signs	May include, but not limited to: • Body Temperature • Respiratory rate • Pulse rate • Mucus membrane • Capillary refill time
Physical Examination	May include, but not limited to: • Inspection • Palpation • Percussion • Auscultation
Signs of illness or injury	May include, but not limited to: • Visible clinical signs, such as discharge, rising of hair coat, dry muzzle, abnormal secretions like diarrheic faeces, discoloured urine, swellings, stomach distension, visible lesions, haemorrhage

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Conduct reception duties courteously in veterinary clinic • Conduct diseases history taking • Carry out efficient physical clinical examination of animals • Asses vital physiological parameters of animals • Identify common and routine animal health problems • Take a record of the anima and diseases condition • Communicate effectively with the veterinarian and follow instructions
Required Knowledge and Attitude	Demonstrate knowledge of: • Types of disease history • Categories of clinical disease diagnosis • Signs and symptom of sick animals • Normal animal behaviour • Understand vital physiological parameters of animals • The range of physiological parameters of healthy/normal animal • Techniques of physical examination • Diseases that transmit from animal to people • Clinic security procedures • Daily clinic routine procedures including clipping hoof, castration and external parasite control.
Required Skills	Demonstrate skills to: • Record patient details and take diseases history • Use positive animal behaviour responses

	• Identify risks of infection and cross-infection • Conduct reception duties courteously in veterinary clinic • Measure physiological parameters of animals • Carry out efficient physical clinical examination of animals • Recognize signs of clinical cases such as diarrhoea, pain or unexpected bleeding • Use, store and control veterinary medicines in a careful manner • Quickly and accurately measure and monitor the vital signs of animals in care • Recognize abnormality in any given patient through regular observation • Record patient details
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level II	
Unit Title	**Apply Animal Feeding and Nutrition**
Unit Code	**AGR ANH2 04 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to carry out animal nutrition and feeding practices in order to enhance production and productivity of livestock industry. It also covers good management practices, record and reporting after completion work.

Element	**Performance Criteria**
1. Identify Animal feed source and Digestive Physiology	1.1. Animal ***source of feed*** determined by on Livestock farming systems based on ***production system*** 1.2. Animal ***feed categorized*** based on their content and nutritional value. 1.3. Temperature requirements in the house for feed storage, preserve and processing are followed correctly. 1.4. ***Roughages classified*** clearly identified based on their moisture content and digestibility. It also classified by type of source 1.5. Feedstuffs Classification ***by origin*** and ***by Crud fibre (CF%***) into well identified and described. 1.6. ***Concentrates feed source*** well identified and classified categorically. 1.7. Advantages and disadvantages of ***feed source*** intended and used based on efficiency, availability and cost effective. 1.8. ***Feed consists*** identified and described based on percentage composition that used for different animals. 1.9. The function and degree of digestion well identified and described for different ***digestive organ*** on different ***Animal species.*** 1.10. The role of ***gastrointestinal hormones, pH & Enzymes*** on the digestion of different feed type in different species well differentiated.
2. Determine Animal Feeding and feed requirement	2.1. ***PPE*** are accessed and used correctly. 2.2. Appropriate tools and ***equipment,*** feed and water containers are selected and checked for cleanliness and made ready for use. 2.3. ***OHS guidelines*** and procedures are followed accordingly. 2.4. ***Feed and feed supplements*** are confirmed and prepared in line with ***feeding plans.*** 2.5. ***Essential requirements*** for animal nutrition are determined according to assessed animal condition. 2.6. Economic basis to supplementary ***feeding system*** is determined according to enterprise requirements. 2.7. ***Existing and potential hazards*** in relation to feeding and watering are identified and reported to the supervisor.

	2.8. Feeding plans to process is ***monitored*** to ensure animals are fed effectively in accordance with feeding plans 2.9. ***Factors*** that determine animal feed intake and feed requirement for different animal species identified at different stages. 2.10. The most important ***elements of feed*** required for animal at different quantity identified. 2.11. Feeding procedure, frequency and practice aligned with animal type, production type and physiological status. 2.12. Feeding and watering abnormalities and signs of stress in animals are recorded and reported to the supervisor according to organizational guidelines and procedures.
3. Feed Ration Formulation	3.1. Feeding plan and ***information of feeding plan*** is prepared and adjusted as appropriate to livestock farming system and essential nutritional requirements. 3.2. Feeding plan is developed and monitored to ensure production plan according to enterprise objectives. 3.3. A feeding method options are selected that supplies the appropriate amount of feed to the herd/flock to meet condition and growth needs, and that meets production requirements of the business. 3.4. A ***feed types and feed budget*** is determined according to the selected system of feeding. 3.5. Costs benefit analysis are undertaken within enterprise feed budget requirements 3.6. Data is documented for continual assessment and effective management planning. 3.7. Animal feed content evaluation performed as per the required standard, such as the DM (dry matter), TDN (total digestible nutrient& CF (crud fibres) 3.8. Animal feed requirement for specific animal calculated based on their body weight, production, age and species type. 3.9. Apply the basic ration formulation steps during animal feed preparation form locally available feed sources.

Variable	**Range**
Source of feed	May include but not limited to: • Natural pasture/Naturally growing vegetation, planted forage, Crop residues, Forage from trees & shrubs, Industrial bi-products
Feed categorized include	May include but not limited: • Unbalanced feed, Balanced feed, Supplementary feed, Vitamins & minerals, Water

Roughages classified	May include, but not limited to: • High quality roughage /succulent/; Medium quality roughage; Poor quality roughage/Dry roughage/ • Type of source - Grasses (pasture); Legumes; Fodder crops; Agricultural by-products; Conserved fodders, Industrial roughage
Classification by origin	May include, but not limited to: • Plant origin → Roughage and concentrates • Animal origin → All products have a high energy content and often a high protein content. They are considered concentrates, except for poultry manure, as it has a high CF content • Chemical → Used in feeding when CP in ration is (too) low.
Calcification By CF%	May include but not limited to: • Roughage → With a CF% in the DM higher than 18% usually vegetative plant parts 2. Concentrates → With a CF% in the DM lower than 18% ripe seeds/grains or products derived from these
Concentrate feed source classification	May include, but not limited to: • Cereal grains • Pulses • Other seeds & parts • By-products from agricultural industries: Oil industries, like cakes Milling industries, like bran Sugar/alcohol/fruit industries, like citrus pulp, beet pulp, brewers' grain • Animal products • Industrial feedstuffs
Feed source	May include, but not limited to: • Hay- Haylage, Row crop silage, Pasture
Feed content	May include, but not limited to: • Feed consists of water and Dry Matter (DM)
Digestive organ	May include, but not limited to: • mouth, Esophagus, Stomach, Intestinal, Liver and Pancreas
Animal species	May include, but not limited to: • bovine, small ruminant, pig, equines, poultry, fishery and pet animals
Gastrointestinal hormones	May include, but not limited to: • Gastrointestinal hormones- Polypeptide Hormones (Gastrin, Cholecystokinin (Pancreozymin), Secretin) and • Other hormones, Gastric inhibitory polypeptide (GIP), Vasoactive intestinal polypeptide (VIP), Motilin, Enterogastron, Entero-oxyntin, Enteroglucagon, Chymodenin, Bulbogastrone,
Enzyme	May include, but not limited to:

	• Salivary amylase, Pepsin A (fundas), Rennin, Trypsin, Chymotrypsin, Carboxypeptidase, Pancreaticamylase, Lipas, Aminopeptidase and etc.
PPE	May include, but not limited to: • Overall, gloves, aprons, boots, goggle, hair elastics and hat.
Equipment	May include, but not limited to: • Knives, knife-sharpening equipment, secateurs, scissors, nutcrackers, blenders and mincers, waterier, feeder
Feed types	May include but not limited to: • Forage • Concentrate • Crop residue • Additive feeds
OHS guidelines	May include, but not limited to: • Animal care has a range of associated risks from bites, kicks or scratches. All duties should reflect an awareness of and a respect for these risks. • Appropriate safe handling techniques are used to reduce muscle load on exertion. Animal facilities expose personnel to risks such as zoonoses, release of infective agents (both animal and human) and chemical spillage. • Procedures to reduce the spread of disease may include, but are not limited to: ➢ Incident reporting, ➢ Cleaning, removal of waste and spillage, containment or elimination of risk, ➢ The use of PPE and ➢ Seeking advice from supervisors. • Protocols for safe work practices may include, but not limited to: ➢ Use of PPE clothing and equipment including safety goggles and glasses, protective masks, safety gloves, aprons, appropriate footwear and animal handling gauntlets, hazard identification and risk minimisation; ➢ The handling, use, storage, transport and disposal of chemicals; and ➢ The handling and disposal of biological wastes. • Safe work practices include the packaging and handling of animals and equipment.
Source of feeds	May include but not limited: • Grass • Agricultural by products • Industrial by products • Minerals and etc
Feed and feed supplements	May include, but not limited to: • Quantity and quality of feed, checked incidence of toxic species and weeds, and checking for cleanliness and freshness including the

	removal of stale or contaminated feed • Feed supplements may include hay, grain, trace element, vitamins and sources of specific-purpose feeds • Supplementary feeding may be required to cover seasonal, drought or other feed shortages and trace element deficiencies
Essential requirements	May include, but not limited to: • Energy, protein, vitamins, water and minerals. Essential requirements may vary due to live weight and body condition, mating, lactation and milking, growth, weather conditions/wind chill, sex and age of animal, energy concentration of feeds, distance walked for feed, water or shade, pasture digestibility, and disease/health status.
Feeding system	May include but not limited to: • Indoor feeding: Pasture and rangeland grazing in open fields • Outdoor feeding: Several different types of feed are fed to livestock including hay, silage, grain and prepared rations
Existing and potential hazards	May include, but not limited to: • Animal movement and handling, • Solar radiation, organic and other dusts, excessive noise, • Moving machinery and vehicles, • The contamination from vermin and the possibility of zoonoses.
Monitored	May include, but not limited to: • Ensuring that no one animal or group of animals dominates the feed and/or water supply.
Factors	May include, but not limited to: Animal age, production, physiological and health status, weather condition, body maintained, growth
Elements of feed	May include, but not limited to: • water, proteins, carbohydrates, fats, minerals and vitamins.
Information on feeding plans	May include, but not limited to: • Production objectives • Method of feeding • Problems associated with purchasing feeds • Matching feed supply and demand, and feed ration formulation and treatment strategy.
Feed types	May include but not limited to: • Forage • Concentrate • Crop residue • Additive feeds
Feed budget	May include, but not limited to: • Aspects of the local area and of the enterprise, including delivery patterns, area of operation (climate, geography, farming system, etc.), pasture growth rates and seasonal variation, market availability and price of feeds.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate Knowledge and skills to: • Feed source and digestive system Anatomy and physiology well identified and feed digestion • Follow instructions while assisting in the preparation and presentation of feed • Ration formulation and calculation • Prepare and mix feed and feed items as directed • Maintain feed quality, presentation and hygiene standards at all times • Monitor and record the condition of animals • Follow feeding plan to meet the nutritional requirements of animals • Handle animals in a safe manner • Identify sick animal and take measure • Monitor the feeding process and report eating and drinking abnormalities • Maintain records • Maintain clean, hygienic and safe feed
Required Knowledge and Attitude	Demonstrate knowledge of: • Organizational feeding program requirements, including OHS and hygiene standards • Animal digestive system Anatomy and physiology • Animal nutrition and feeding practice • Optimal storage conditions for different types of feedstuffs to ensure quality is maintained. • Basic nutritional requirements for different groups of animals, including feeding and watering • Good management practices watering, housing, breeding, culling, calf rearing • Types of feed and feed supplements • Safe animal handling techniques and procedures • Hazards associated with handling animals and control measures • PPE clothing and equipment and when and how it should be used • Organizational guidelines regarding feeding animals • Recording and reporting routines • Symptom diseased animals • The variation in reproductive capacity among farm animals • Identify feed related diseases and contamination
Required Skills	Demonstrate skills to: • Apply relevant organizational guidelines and procedures on feed management and feeding • Apply feed preparation techniques • Check feed orders accurately • Ration formulation and calculation • Dispose of waste in accordance with health and safety standards • Provide feed and feed supplements in accordance with feeding plan

	• Monitor animal health and condition and recognize abnormalities • Communicate and report animal eating and drinking abnormalities and workplace hazards • Measure the reproductive efficiency of the farm animal • Keep the best and cull the poorest breed • Maintain animal records
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level II	
Unit Title	**Identify Basic Veterinary Drugs and Chemicals**
Unit Code	**AGR ANH2 05 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to develop understanding of basic terminologies, importance of basic veterinary drugs, chemotherapeutic drugs including antimicrobial, anthelminthic, acaricides, antifungal agents, antiprotozoal drugs, antiseptics and disinfectants. It also covers the knowledge required to identify route of drug administration for various species of animals.

Element	**Performance Criteria**
1. Identify the importance and sources of drugs	1.1 ***Basic terminologies*** used in veterinary pharmacology are defined. 1.2 General information on the importance of drugs is described. 1.3 Main sources and origin of drugs are identified
2. Understand disposition and fate of drugs	2.1. General information on drug absorption, distribution, metabolism and elimination are described 2.2. Production and expiry date, withdrawal period, precaution, manufacturers' instruction of basic veterinary drugs and chemicals are understood. 2.3. ***Dosage form, Route and*** site ***of drug administration*** for various species of animals identified. 2.4. Residual and side effects of basic veterinary drugs and chemicals are understood.

3. Identify basic categories of therapeutics drugs	3.1. ***Therapeutic drugs*** used in the treatment of various disease causing agents are identified. 3.2. Hormones, ***vitamins***, ***mineral supplements*** and other ***chemicals*** used for animal disease/ problem treatment and available in the market are identified**.**

Variable	**Range**
Basic terminologies	May include, but not limited to: • Pharmacology • Therapeutics • Drug • Dose • Dosage • Residual effect/side effect
Dosage form	May include, but not limited to: • Tablet • Capsule • Bolus • Cream • Ointment • Syrup • Injection
Route of drug administration	May include, but not limited to: • Intravenous, per OS, subcutaneous, intra-muscular, enemas, infusion
Therapeutic drugs	May include, but not limited to: • Antibacterial • Antifungal • Anthelminthic • Antiprotozoal
Vitamins	May include, but not limited to: • Multivitamin, Vit B-complex, vit A,
Mineral supplements	May include, but not limited to: • Calcium borogluconate, Dicalcium phosphate, Chalk, Disodium phosphate, Dehydrated disodium, phosphate Magnesium sulphate, Magnesium oxide, Iodized salt, Cobalt sulphate, preparation, Zinc sulphate, Zinc oxide, Manganese sulphate, Manganese oxide.
Chemicals	Deltametrin, malation, parathion, organophosphorous compounds (e.g., Diazinon), carbamates (e.g., carbaryl), pyrethroids (e.g., permethrin, flumethrin), formamidines, and avermectins

Evidence Guide

Critical Aspects of Competence	Must demonstrate knowledge and skills to • Explain basic terminologies used in veterinary pharmacology. • Explain general information on the importance and sources of drugs. • Discuss drug absorption, distribution, metabolism and elimination understand and able to explain Dosage form, Route and site of drug administration for various species of animals • Identify Therapeutic drugs used for treatment of for various disease causing agents. • Identify hormones, vitamins, mineral supplements and other chemicals used for animal disease/ problem treatment and available in the market are identified**.**
Required Knowledge and Attitude	Demonstrate knowledge to: • Relevant legislations, regulations and directives • Explain basic terminologies used in veterinary pharmacology. • Explain general information on the importance and sources of drugs. • Types of chemotherapeutic agents including: • Their adverse effects and milk or meat withdrawal periods for the different types of veterinary drugs • Routes of drug administration • Risks and emergencies associated with drug use.
Required Skills	Demonstrate skills to/in: • Identify the different types of drugs used for the treatment of animal diseases. • Identify Therapeutic drugs used for treatment of for various disease causing agents. • Identify hormones, vitamins, mineral supplements and other chemicals used for animal disease/ problem treatment and available in the market are identified**.** • Literacy skills to read and follow organisational guidelines and procedures including OHS; follow sequenced written instructions; and record information accurately and legibly • Follow workplace procedures in veterinary drug use, • Observe safe practices during work operations
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational standard: Animal health Level II	
Unit title	**Perform Reproductive Health Care and Artificial Insemination Activities**
Unit code	**AGR ANH2 06 0322**
Unit descriptor	This unit covers the knowledge, skills and attitude required to identify and prevent the prevailing reproductive diseases or infertility problems and carry out pregnancy diagnosis. It also contains knowledge and skill to conduct semen handling and Artificial Insemination procedures in promoting production/productivity of animals.

Element	**Performance criteria**
1. Identify and manage Reproductive diseases and fertility problems	1.1. Basic understandings on reproductive anatomy of normal/healthy animals are acquired. 1.2. Infectious and non-infectious ***reproductive diseases and fertility problems*** of ***farm animals*** are identified. 1.3. Existing and potential hazards in the workplace are recognized, risk assessed and controlled according to ***OHS*** requirements. 1.4. Reproductive diseases and fertility problems are diagnosed based on veterinary clinical examination and appropriate information from records. 1.5. Sick animals are identified, isolated and cared according to the organizational guidelines. 1.6. Identified infertility problems are reported to immediate supervisors to take ***appropriate preventive and control measures*** according to national and enterprise guide lines. 1.7. Advice is provided to beneficiaries in accordance to the enterprise guidelines.
2. Perform Artificial Insemination procedures	2.1. Detail case history of the animal came for the service is addressed form the owner. 2.2. The ***phases of estruses cycle*** are understood. 2.3. The main ***sign of oestrus***/***heat*** is detected. 2.4. ***Animals intended for insemination*** are restrained and correctly assessed for insemination according to the supervisor/ industry guide lines. 2.5. Animals in heat are identified and prepared for insemination according to ***the industry guide lines***. 2.6. ***Estruses synchronization*** is carried out, as required, according to the industry cod of conduct. 2.7. Timing of insemination process is scheduled to ensure availability of ***resource*** and personnel requirements. 2.8. The required materials, tools and equipment are prepared and used according to the industry guidelines. 2.9. Collected semen is properly ***handled*** and periodically top-upped during storage, distribution and at field levels according to the industry guidelines. 2.10. The necessary ***materials and equipment*** are prepared for insemination

	according to industry code of practice. 2.11. ***Personal protective clothes and equipment*** are used according to the industry guidelines. 2.12. The semen is selected and thawed according to accepted industry practices. 2.13. Insemination is carried out maintaining all the ***veterinary sanitation procedures.*** 2.14. Insemination and breeding data are recorded and ***AI efficiency*** is evaluated according to the industry requirements. 2.15. Materials and equipment to be reused are cleaned and returned to safe and appropriate place whereas other ***wastes*** are safely disposed
3. Perform pregnancy test in livestock	3.1. Basic understandings on the physiology of ***reproductive hormones*** in female animals are developed. 3.2. Fertilization and embryo development in animals are explained. 3.3. Gestation lengths in ***different species*** of animals are mentioned. 3.4. ***Methods of pregnancy test*** in animals are mentioned. 3.5. ***OHS hazards*** are continually identified, risks assessed and suitable controls implemented. 3.6. ***PPE*** are used according to organization requirement. 3.7. Preparation of relevant documentation is completed according to organisation requirements and procedures. 3.8. ***Materials and equipment*** needed for pregnancy diagnosis are prepared. 3.9. Animals are mustered, yarded and safely restrained in line with organisational policy. 3.10. ***Pregnancy diagnoses*** are carried out following standard guidelines and procedures 3.11. The stage of pregnancy, growth postural and positional abnormalities of pregnancy is identified following the recommended guide lines. 3.12. ***Differentia diagnosis*** for pregnancy diagnosis are considered. 3.13. Records are kept and test results reported according to organization requirements. 3.14. Debris and veterinary medicine containers from pregnancy testing operations are disposed of in full consideration of environmental considerations and controls. 3.15. Regular monitoring of animals post testing is carried out to ensure that no evidence of physical damage or injury is evident.

Variables	**Range**
OHS	May include, but not limited to: • Operation of equipment • Hazard and risk control • Handling animals including zoonoses control • Manual handling, including lifting and carrying • Protection from hazardous noise and organic and other dusts • Handling and storage of hazardous substances

	• Outdoor work including protection from solar radiation Appropriate use of PPE.
Farm animals	May include but not limited to: • Livestock are domesticated animals raised in an agricultural setting to produce commodities such as meat, milk, leather, and wool.
Signs of reproductive diseases and fertility problems	May include, but not limited to: • The signs are anestrous, repeat breeding or prolonged calving interval, abortion, still birth, abnormal vaginal discharge, alteration of the size of reproductive organs, dourine, ovarian cyst, in active ovary, hyperplasia and hypoplasia of ovary, metritis, persistence of corpus luetum and other diseases
Appropriate measures	May include, but not limited to: • PPE clothes, tools, equipment and working site are maintained and used so as to minimize the transmission of diseases according to the enterprise guide • Culling of the animal • Treating the animal by a veterinarian Isolating and treating the animal
Prevention and control activities	May include, but not limited to: Eradicating, prevention and controlling diseases through veterinary activities.
Phases of estrus cycle	May include but not limited to: • Oestrus • Metoestrus • Dioestrus • Pro-oestrus
Sign of oestrus /heat	May include but not limited to: • Standing when mounted and mounting on others • Restless and frequent bellowing. • Swollen vulva and the vaginal mucous membrane is deep red in colour. • A clear string of mucus hanging from the vulva. • Frequent urination • Reduced appetite and milk yield
Animals intended for insemination	May include but not limited to: • Female animals with observed heat signs and are ready to be inseminated according to the industry guide lines.
industry guide lines	May include but not limited to: • Industry standard operating procedures (sops), work notes, legislations, and or verbal communications.
Resource	May include but not limited to: • Artificial insemination bags, liquid nitrogen, liquid nitrogen containers, vehicles(motorcycles), Helmet, and others,
Estruses synchronization	May include but not limited to: • Purpose, hormones, selection criteria

handling	May include but not limited to: • Keep the germ plasma live • Keep its fertility during storage, transport and at field level. • Topping up with liquid nitrogen and thawed with appropriate temperature according to the industry guidelines.
Materials and equipment	May include but not limited to: • Gloves • Insemination gun • Containers • Thermos flask • Scissors, Canister, Towel or tissue paper, Forceps • AI kit bag • Thermometer • AI certificate • Case recording book • Semen straw • Liquid nitrogen • Ai sheath
Personal protective clothes and equipment	May include but not limited to: • Boots • Overalls • Gloves • Sun protection (sun hat, sunscreen).
OHS	May include but not limited to: • Safe animal handling systems and procedures including zoo noses control, Identify hazards, assess and report risks. • Safe manual handling systems and procedures. • Safe systems and procedures for outdoor work including protection from solar radiation. • Appropriate use of personal protective equipment.
Veterinary sanitation procedures	May include but not limited to: • Washing and hygienic preparation of the vulva area, disinfection and cleaning of AI equipment, • Preventing zoon sis and venereal diseases by wearing gloves and other appropriate protective materials according to the industry guidelines.
AI efficiency	May include but not limited to: • None return rate, number of services per conception, pregnancy rate, calving rate, calving interval. • These parameters in turn may indicate the breeding efficiency of the animal, the efficiency and ability of the inseminator, and the fertility and quality of the semen.
Wastes	May include but not limited to: • Gloves, insemination sheath and other packing materials.
Reproductive hormones	May include but not limited to: • Gonadotropin Releasing hormone

	• Oestrogen • Follicular stimulating hormone (FSH) • Luteinizing hormone (LH) • Progesterone • Prostaglandin $F_2\alpha$
different species	May include but not limited to: • Caw, sheep/Goat, Mare
Methods of pregnancy test	May include but not limited to: • Physical observation on anatomical change of dam • Rectal palpation • Hormone detection (from blood, urine sample) • External ballottement • Probing
Differentia diagnosis	May include but not limited to: • Fetal mummification and maceration • Hydrometra and Mucometra • Pseudo pregnancy associated with Leutial cyste and tumer
Materials and equipment	May include, but not limited to: • Stethoscope • Thermometer • Vaginal speculum (optional) • Gloves of different size • Lubricant
Evidence Guide	
Critical aspects of competence	Must demonstrate knowledge and skills to: • Identify and list major reproductive diseases of farm animals • Diagnose reproductive diseases and fertility problems • Take appropriate measures to prevent and control the prevailing reproductive diseases or infertility of animals. • Detect heat; maintain all insemination procedures and record data after completion of the work. • Explain physiology, pathology and differential diagnosis of pregnancy of the animal • Prepare the necessary equipment, materials and tools used for pregnancy diagnosis • Carry out pregnancy diagnosis
Required knowledge	demonstrate knowledge of: • Reproductive anatomy and physiology of the animal. • Basic knowledge of infertility and reproductive diseases in livestock. • Basic breeding principles, including the estrus cycle and heat signs and its significance. • Nutrition, animal health and abnormalities in relation to reproduction. • Semen handling including thawing techniques

	• Preparation requirements for artificial insemination of animals • Diseases that have a potential to transmit to humans and or animals through semen • Relevant legislation, regulations and codes of practice with regard artificial insemination, workplace OHS and animal welfare • Different stages of pregnancy and stages of parturition in animals • Relevant zoonoses • Reproductive abnormalities • Systems used in conjunction with pregnancy diagnosis and animal breeding programs
Required skill	demonstrate skills to: • Arrange and co-ordinate equipment and resources in the work area • Provide due care and humanely handle animals • Identify the signs of infertility and reproductive health problems. • Select and prepare livestock for culling and or for treatment. • Advise beneficiaries so as to take appropriate measures to control and prevent the prevailing infertility and reproductive health problems. • Notify the signs of infertility and reproductive health problems observed in animals intended for breeding to supervisors for further actions. • Identify animals on heat through observation and palpation for correct insemination timing. • Handle semen properly and inseminate animals • Record and report reproductive data. • Identify the different stages of pregnancy and pathology of pregnancy. • Carry out differential diagnosis of pregnancy (to differentiate pregnancy from other organs and abnormalities). • Dispose waste
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level II	
Unit Title	**Apply Knowledge of Animal Welfare and Behaviours**
Unit Code	**AGR ANH2 07 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to explain the concept of animal behaviour and welfare; monitor and observe livestock welfare, implement welfare procedures/practices, identify and report major animal welfare problems, identify animal behaviour in the context of an animal control and regulation environment during day-to-day activities, prepare, maintain and store equipment used to humanely handle the animals.

Element	Performance Criteria
1.Understand the concept of animal behaviour and welfare	1.1. The five elements of ***animal freedom*** are stated and ***animal welfare*** is defined. 1.2. Major ***animal welfare problems*** in Ethiopia are identified in the handling, transportation, harnessing, slaughtering, restraining and etc. 1.3. Major animal ***Abnormal behaviours*** of animals are identified 1.4. ***Risks or hazards when working with animals*** are identified. 1.5. Animal welfare legislation, regulations and codes of practice are identified.
2. Monitor and assess welfare of animal	2.1. Regular checks are taken to ***assess livestock welfare*** according to the requirements of the organisation. 2.2. Welfare problems are recognised and reported. 2.3. Livestock are handled peacefully and according to enterprise procedures 2.4. Thorough personal hygiene practices are maintained in all activities associated with handling livestock, including reducing risks from diseases transmissible to humans. 2.5. Sick or dead livestock is safely treated and humanely destroyed, if necessary 2.6. Environmental implications associated with livestock husbandry practices are identified, assessed whether these are not violating welfare of animal 2.7. ***Constructive solution*** are recommended in cases when animal welfare are found disrupted

3. Identify animal behaviour	3.1. Animal and its body language are observed and interpreted treated. 3.2. Temperament, traits, health and wellbeing of animal are identified and documented. 3.3. Physical and social environment of animal is assessed. 3.4. ***Behaviou*r *of animal*** is determined. 3.5. Organisational policies and procedures and legislative requirements are followed. 3.6. Referral to specialists is offered to owner when appropriate. 3.7 ***Legal response*** to animal behaviour is taken when appropriate.

Variable	**Range**
Animal freedom	May include, but not limited to: • Animals have a right to "5 forms of "freedom" (freedom from hunger, thirst and malnutrition, freedom from fear and distress, freedom from physical and thermal discomfort, freedom from pain, injury and disease, and freedom to express their natural behaviour.
Animal welfare	May include, but not limited to: • Providing for animal's physical and mental needs.
Animal welfare problems	May include, but not limited to: • Anything that affects the mental, physical and naturalness of the animal.
Abnormal behaviours	May include, but not limited to: • Depression, dullness, restlessness, shivering, abnormal discharge and etc. .
Risks or hazards when working with animals	May include, but not limited to: • Animal bites, envenomation, kicks, scratches and crush injuries • Biological hazardous waste • Inhalation of aerosol particles • Intraocular contamination • Manual handling, including carrying, lifting and shifting • Moving parts of machinery or equipment • Release of infective agents (animal and human) • Slippery or uneven work surfaces • Zoonoses.
Assess animal welfare	May include, but not limited to: • Resource based animal welfare assessment • Animal based or output based animal welfare assessment.
Constructive solutions	May include, but not limited to: • Looking at the owner-animal-environment triangle of effect in the expression of problem animal behaviour and offering remedial advice

	• Considering different methods of handling and dealing with animals displaying specific behavioural traits (e.g. Nervous or timid) • Endeavouring to remedy the causes as well as the problem animal behaviour for wandering animals the constructive solution May include, but not limited to: ➢ restoring animal to correct owner property ➢ capture and impoundment ➢ offering advice regarding more adequate fencing ➢ providing advice regarding: a more enriched environment ➢ Improving obedience and responsiveness. ➢ using positive and negative reinforcement training.
Behaviour of animal	May consider: • Normal versus abnormal behaviour • Aggressive versus benign/kind behaviour • Confident versus timid or fearful behaviour.
Legal response	May include, but not limited to: • Detail procedural requirements and explain timelines for outcomes • Issue caution or infringement notice • Recommend action plan • Seize animal.
Risks or hazards to be assessed	May include, but not limited to: • Assessment of breed/type potential to cause harm or difficulty • Circumstances prevailing • Degree of animal restraint and confinement • Level of own experience, confidence and capability • Level of owner/handler cooperation, competence and control • Obvious signs of the animal's abnormal health and condition.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Define animal welfare and list the five animals freedom • Identify the major animal welfare problems in the country • Explain the methods of animal welfare assessment • Determine behaviour and temperament of animals • Identify and interpret animal body language • Comply with standard operating procedures • Report problems that affect animal welfare and quality products • Assess specific types of animal behaviour and respond accordingly • Refer unusual or dangerous behaviour to specialists or action a statutory response
Required Knowledge and Attitude	Demonstrate knowledge of: • Animal health and welfare requirements, practices and procedures. • Animal production processes • Enterprise policies, guidelines and SOP's relating to food safety quality, bio security, and animal welfare. • Animal handling techniques • Relevant animal welfare legislation and codes of practice. • Industry animal welfare and health requirements

Required Skills	Demonstrate skills to: • Implement quality assurance practices on food safety and quality, bio security and animal welfare • Implement standard operating procedures • Report problems that affect animal welfare • Handle livestock in a humane and caring manner
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard : **Animal Health Level II**	
Unit Title	**Apply Agricultural Extension service for Rural development**
Unit Code	**AGR ANH2 08 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to promote the use of digital technology agricultural extension, understand adult learning, Integrated gender agricultural extension and Recognize Indigenous Knowledge

Element	**Performance Criteria**
1. Promote the use of digital technology in Agricultural Extension	1.1 The ***use of Digital technology in Agricultural extension*** is introduced to familiarize its importance 1.2 ***Skills in using digital technology*** is built to strengthen agricultural extension services 1.3 The ***role of digital technologies in agricultural extension*** services is understood to enhance agricultural development.
2. Understand Adult Learning	2.1 The ***concept of adult learning*** is understood to bring behavioural changes 2.2 ***Principles of Adult learning*** is determined for the implementation of extension services 2.3 The ***importance of Adult learning*** in Agricultural Extension is understood to enhance agricultural extension services 2.4 ***Adult learning methods*** are understood to enhance the knowledge and skills of extension beneficiaries 2.5 ***The role of adult learning*** is understood to allow farmers develop knowledge and skills
3. Integrate Gender in Agricultural Extension	3.1 The ***concept of gender*** is understood to provide inclusive agricultural extension services 3.2 Gender awareness and sensitization is created to increase the contribution of gender in agricultural development 3.3 The ***role of gender in agriculture*** is determined to enhance agricultural development. ***3.4 Gender mainstreaming*** is implemented for effective outcome of extension services
4. Recognize Indigenous Knowledge	4.1. The ***concept of indigenous knowledge*** is understood to strengthen the service of agricultural extension 4.2. ***Characters of indigenous knowledge*** are understood to promote local

	experience 4.3. ***Exchange of indigenous knowledge*** is promoted to enhance community development 4.4. The ***importance of indigenous knowledge*** is understood to facilitate its contribution to the development processes. 4.5. The ***controversial issues of the debate on indigenous knowledge*** are further studied to propose the urgent need, to document, learn, preserve, and exchange indigenous knowledge

Variable	**Range**
Use of Digital technology in Agricultural extension	May include but not limited to: • Define Digital Technology • Evolution and progress of digital technologies • Digital technology for Agricultural Extension • Tools for digital technology • Utilization of digital technologies
Skills in using digital technology	May include but not limited to: • Demonstrate digital technologies • Practice digital technologies • Apply digital technologies • Maintain and manage digital technologies
Role of digital technologies in agricultural extension	May include but not limited to: • Provide diverse knowledge to beneficiaries • Supply Efficient information products • Provide technology-related advice • provide location-specific market information • enhance technology adoption in agriculture
Concept of adult learning	May include but not limited to: • Adult learning theories • Characteristics • Adult learning approaches • Purpose of Adult learn • Adult learning practices
Principles of Adult learning	May include but not limited to: • Self-directed • Experiential • Problem-centered • Motivated to learn

	• Learner oriented • Practice Oriented • looks for help and mentorship • Open for modern ways of learning • Choose how to learn
Importance of Adult learning	May include but not limited to; • Increase effective participation in decision making • Improves individuals' technology utilization • Enhances working efficiency, • Keep up with the growing economic competition • Self-improvement • Financial growth and benefit
Adult learning methods	May include but not limited to: • Visual Aids • Audio • Print Media • Tactile • Interactive
The role of adult learning	May include but not limited to: • Behavioral change • Enhance to acquire new skills and knowledge • Access disadvantaged groups • Promote Participatory decision making
Concept of gender	May include but not limited to: • Definition of Gender • Historical development of Gender • Importance of Gender • Gender awareness and sensitization
Role of gender in agriculture	May include but not limited to: • Women's contribution in Agricultural Production • Women's participations in rural labor market • Women's participation in Agricultural Extension • Gender difference in rural labor markets • Impact of gender role in Agricultural Extension services
Gender mainstreaming	May include but not limited to: • Understanding of gender equality • Mainstreaming strategy • Steps of gender mainstreaming

Concept of indigenous knowledge	May include but not limited to: • Definition of Indigenous knowledge • Historical development of indigenous knowledge • Importance of indigenous knowledge for development processes
Characters of indigenous knowledge	May include but not limited to: • Experiences • its compatibility with indigenous environment and culture • insufficient knowledge of rural people • combination of culture, belief and religion
Exchange of indigenous knowledge	May include but not limited to: • Recognition and identification • Validation of indigenous knowledge • Recording and document indigenous knowledge • Storage in retrievable repositories • Dissemination of indigenous knowledge • Utilization of indigenous knowledge
Importance of indigenous knowledge	May include but not limited to: • Problem solving strategies • Important component of global knowledge • Resource in the development processes • Understanding of local conditions • Increase responsiveness of client • Enhance cross cultural understanding
Controversial issues of the debate on indigenous knowledge	May include but not limited to: • Discrimination, • Exploitation, • Dispossession • Miss-Used And • Miss- Appropriation • Violation Of The Right Of Indigenous People

Evidence Guide	
Critical Aspects of Competence	Demonstrate knowledge attitude and skill to: • Use of Digital technology in Agricultural extension • Applies the role of digital technologies in agricultural extension • Implements Adult learning methods • Implements Gender mainstreaming • Facilitates the Exchange of indigenous knowledge • Understands the controversial issues of the debate on indigenous knowledge

Required Knowledge and Attitudes	Demonstrates knowledge of - • Understands concept of adult learning • Recognize the Principles of Adult learning • Appreciates the importance of Adult learning • Understands the concept of gender • Understands the concept of indigenous knowledge • Understand the Characters of indigenous knowledge • Appreciates the importance of indigenous knowledge • Understands the controversial issues of the debate on indigenous knowledge
Required Skills	Demonstrates skills: • Demonstrates the use of Digital technology in Agricultural extension • Applies the role of digital technologies in agricultural extension • Implements the Adult learning methods • Understands and implements the role of adult learning • Understands and implement the role of gender in agriculture • Implements Gender mainstreaming • Facilitates the Exchange of indigenous knowledge
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and Occupational health and safety (OHS) practices.
Methods of Assessment	Competence may be assessed through: • Written Test, Interview, Quiz, Practical assignment • Observation and Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level II	
Unit Title	**Prevent and Eliminate MUDA**
Unit Code	**AGR ANH2 08 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required by a worker to prevent and eliminate MUDA/wastes in his/her workplace by applying scientific problem-solving techniques and tools to enhance quality, productivity and other kaizen elements on continual basis. It covers responsibility for the day-to-day operation of the work and ensures Kaizen Elements are continuously improved and institutionalized.

Element	Performance Criteria
1. Prepare for work.	1.1. Work instructions are used to determine job requirements, including method, material and equipment. 1.2. Job specifications are read and interpreted following working manual. 1.3. ***OHS requirements***, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work. 1.4. Appropriate material is selected for work. 1.5. ***Safety equipment and tools*** are identified and checked for safe and effective operation.
2. Identify MUDA and problem	2.1 Plan of MUDA and problem identification is prepared and implemented. 2.2 Causes and effects of MUDA are discussed. 2.3 All possible problems related to the process /Kaizen elements are listed using ***statistical tools and techniques***. 2.4 All possible problems related to kaizen elements are identified and listed on Visual Management Board/Kaizen Board. 2.5 ***Tools and techniques*** are used to draw and analyze current situation of the work place. 2.6 Wastes/MUDA are identified and measured based on ***relevant procedures***. 2.7 Identified and measured wastes are reported to relevant personnel.
3. Analyze causes of a problem.	3.1 All possible causes of a problem are listed. 3.2 Cause relationships are analyzed using***4M1E***. 3.3 Causes of the problems are identified. 3.4 The root cause which is most directly related to the problem is selected. 3.5 All possible ways are listed using ***creative idea generation*** to eliminate the most critical root cause. 3.6 The suggested solutions are carefully tested and evaluated for potential complications. 3.7 Detailed summaries of the action plan are prepared to implement the suggested solution.
4. Eliminate MUDA and Assess	4.1. Plan of MUDA elimination is prepared and implemented by ***medium KPT*** members. 4.2. Necessary attitude and the ***ten basic principles*** for improvement are

effectiveness of the solution.	adopted to eliminate waste/MUDA. 4.3. Tools and techniques are used to eliminate wastes/MUDA based on the procedures and OHS. 4.4. Wastes/MUDA are reduced and eliminated in accordance with OHS and organizational requirements. 4.5. ***Tangible and intangible results*** are identified. 4.6. Tangible results are compared with targets using ***various types of diagrams***. 4.7. Improvements gained by elimination of waste/MUDA are reported to relevant bodies.
5. Prevent occurrence of wastes and sustain operation.	5.1. Plan of MUDA prevention is prepared and implemented. 5.2. Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement are discussed and prepared. 5.3. Occurrences of wastes/MUDA are prevented by using ***visual and auditory control methods***. 5.4. Waste-free workplace is created using ***5W and 1H***sheet. 5.5. The completion of required operation is done in accordance with standard procedures and practices. 5.6. The updating of standard procedures and practices is facilitated. 5.7. The capability of the work team that aligns with the requirements of the procedure is ensured and trained on the new ***Standard Operating Procedures (SOPs)***.

Variable	**Range**
OHS requirements	May include, but not limited to: • Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • PPE are to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Safety equipment and tools	May include, but not limited to: • Dust masks/goggles • Glove • Working cloth • First aid and • Safety shoes
Statistical tools and	May include, but not limited to:

techniques	• 7 QC tools May include, but not limited to: ➢ Stratification ➢ Pareto Diagram ➢ Cause and Effect Diagram ➢ Check Sheet ➢ Control Chart/Graph ➢ Histogram and Scatter Diagram • QC techniques May include, but not limited to: ➢ Brain storming ➢ Why analysis ➢ What if analysis ➢ 5W1H
Φ	May include, but not limited to: • Plant Layout • Process flow • Other Analysis tools • Do time study by work element • Measure Travel distance • Take a photo of workplace • Measure Total steps • Make list of items/products, who produces them and who uses them & those in warehouses, storages etc. • Focal points to Check and find out existing problems • 5S • Layout improvement • Brainstorming • Andon • U-line • In-lining • Unification • Multi-process handling &Multi-skilled operators • A.B. control (Two point control) • Cell production line • TPM (Total Productive Maintenance)
Relevant procedures	May include, but not limited to: • Make waste visible • Be conscious of the waste • Be accountable for the waste and measure the waste.
4M1E	May include, but not limited to: • Man • Machine • Method Material and Environment
Creative idea generation	May include, but not limited to: • Brainstorming • Exploring and examining ideas in varied ways

	• Elaborating and extrapolating • Conceptualizing
Medium KPT	May include, but not limited to: • 5S • 4M (Machine, Method, Material and Man) • 4p (Policy, Procedures, People and Plant) • PDCA cycle Basics of IE tools and techniques
The ten basic principles for improvement	May include, but not limited to: • Throw out all of your fixed ideas about how to do things. • Think of how the new method will work- not how it won. • Don't accept excuses. Totally deny the status quo. • Don't seek perfection. A 5o percent implementation rate is fine as long as it's done on the spot. • Correct mistakes the moment they are found. • Don't spend a lot of money on improvements. • Problems give you a chance to use your brain. • Ask "why?" At least five times until you find the ultimate cause. • Ten people's ideas are better than one person's. • Improvement knows no limits.
Tangible and intangible results	May include, but not limited to: • Tangible result may include quantifiable data • Intangible result may include qualitative data
various types of diagrams.	May include, but not limited to: • Line graph • Bar graph • Pie-chart • Scatter diagrams • Affinity diagrams
Visual and auditory control methods	May include, but not limited to: • Red Tagging • Sign boards • Outlining • And ons • Kanban, etc.
5W and 1H	May include, but not limited to: • Who • What • Where • When • Why and • How

Standard Operating Procedures (SOPs).	May include, but not limited to: • The customer demands • The most efficient work routine (steps) • The cycle times required to complete work elements • All process quality checks required to minimize defects/errors • The exact amount of work in process required

Evidence Guide	
Critical Aspects of Competence	Demonstrate knowledge and skills to: • Discuss why wastes occur in the workplace • Discuss causes and effects of wastes/MUDA in the workplace • Analyze the current situation of the workplace by using appropriate tools and techniques • Identify, measure, eliminate and prevent occurrence of wastes by using appropriate tools and techniques • Use 5W and 1H sheet to prevent • Detect non-conforming products/services in the work area • Apply effective problem-solving approaches/strategies. • Implement and monitor improved practices and procedures • Apply statistical quality control tools and techniques.
Required Knowledge and Attitude	Demonstrate knowledge of: • Targets of customers and manufacturer/service provider • Traditional and kaizen thinking of price setting • Kaizen thinking in relation to targets of manufacturer/service provider and customer • value • The three categories of operations • the 3“MU” • wastes occur in the workplace • The 7 types of MUDA • QC story/PDCA cycle/ • QC story/ Problem solving steps • QCC techniques • 7 QC tools • The Benefits of identifying and eliminating waste • Causes and effects of 7 MUDA • Procedures to identify MUDA • Necessary attitude and the ten basic principles for improvement • Procedures to eliminate MUDA • Prevention of wastes • Methods of waste prevention • Definition and purpose of standardization • Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement • Methods of visual and auditory control

	• TPM concept and its pillars. • Relevant OHS and environment requirements • Method and Lines of communication • Methods of making/recommending improvements. • Reporting procedures • Workplace procedures associated with the candidate's regular technical duties • organizational structure of the enterprise
Required Skills	Demonstrate skills to: • Draw & analyze current situation of the work place • Use measurement apparatus (stop watch, tape, etc.) • Calculate volume and area • Apply statistical analysis tools • Use and follow checklists to identify, measure and eliminate wastes/MUDA • Identify and measure wastes/MUDA in accordance with OHS and procedures • Use tools and techniques to eliminate wastes/MUDA in accordance with OHS procedure. • Apply 5W and 1H sheet • Update and use standard procedures for completion of required operation • Apply Visual Management Board/Kaizen Board. • Detect non-conforming products or services in the work area • Work with others • Read and interpret documents • Observe situations • Solve problems • Communicate information • Gather evidence by using different means • Report activities and results using report formats • Implement and monitor improved practices and procedures
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Level III

Occupational Standard: Animal Health Level III	
Unit Title	**Identify and Handle Non-Infectious Animal Diseases**
Unit Code	**AGR ANH3 01 0322**
Unit Description	The unit covers the knowledge, skills and attitude required to identify and treat different categories of non-infectious causes of animal disease. It also covers the ability to participate in prevention and minimization of its effect through community education and providing consultancy to other stack holders in the line of livestock industry.

Element	Performance Criteria
1.Develop general understanding on non-infectious diseases of animals	1.1. The definition and clinical as well as economic impacts of non-infectious diseases are introduced. 1.2. Statistical information on the current condition and implication of the problem in Ethiopian context are explained. 1.3. The causes of different ***categories of non-infectious*** disease of animals are mentioned and explained.
2.Identify and handle causes of animal poisoning	2.1. Aetiology, clinical sign, diagnosis, treatment and prevention/control methods of ***animal*** diseases caused by ***chemical toxins*** are identified and implemented. 2.2. Aetiology, clinical sign, diagnosis, treatment and prevention/control methods of animal diseases caused by ***phyto-toxines*** (toxic plants) are identified and implemented.
3. Identify and handle metabolic and nutritional causes of animal diseases	3.1. Aetiology, clinical sign, diagnosis, treatment and prevention/control methods of diseases caused by ***nutritional imbalances*** are identified and implemented. 3.2. Aetiology, clinical sign, diagnosis, treatment and prevention/control methods of animal diseases caused by ***metabolic disorders*** are identified and implemented.
4. Identify and handle miscellaneous causes of animal diseases	4.1. Aetiology, clinical sign, diagnosis, treatment and prevention/control methods of animal diseases caused by ***allergies*** are identified and implemented. 4.2. Aetiology, clinical sign, diagnosis, treatment and prevention/control methods of animal diseases caused by ***physical trauma*** are identified and implemented. 4.3. Aetiology, clinical sign, diagnosis, treatment and prevention/control methods for ***neoplastic*** causes of animal disease are identified and implemented.

Variable	Range
Animal	May include, but not limited to: • Bovine , Equine, Ovine, Caprine, swine

	• Camel, Canine, Feline, avian
Categories of non-infectious diseases	May include, but not limited to: • Allergies • poisoning (pesticides, Acaricides, herbicides, Rodenticides, industrial chemical poisoning) • Genetic • Metabolic • Nutritional imbalance (protein, CH2O, vitamins and minerals) • Neoplastic • Physical trauma • Plant poisoning (Phytotoxic plants include, bracken fern, crotalaria, cyanide, gossypol, lantana camara, sweet clover..)
OHS policies and procedures	May include, but not limited to: • Appropriate handling reprocessing of reusable equipment • Aseptic technique • Cover cuts and abrasions with waterproof dressing and change as necessary • Maintain personal immunisation/vaccination requirements for working with animals where required • Personal hygiene practices especially washing and drying hands before and after animal contact and/or any activity likely to cause cross-contamination • Safe handling and disposal of sharps and other clinical, related and general waste • Use of PPE clothing and equipment and change as appropriate for the intended use.
Hazard	May include, but not limited to: • Possible Zoonosis • Animal bites, envenomation, kicks, scratches and crush injuries • Biological hazardous waste and sharps objects • Handling of chemicals and medicines • Inhalation of aerosol particles • Intraocular contamination • Manual handling, including carrying, lifting and shifting • Needle pricks and cuts from other sharps • Release of infective agents (animal and human). • Slippery or uneven work surfaces
Treatment material	May include, but not limited to: • Stomach tube and mouth gag • Nasogastric tube • Syringe • Needle • Trocar and cannula • Chemical sprayer

Therapeutic substances	May include, but not limited to: • Magnesium hydroxide • Sodium bicarbonate • Indigestion powder/$MgSO_4$ • Calcium borogluconate • Sodiumnitrite • Methylene blue • NH_4Cl • Antihistamine • Atropine sulfate • Pentobarbital • Methocarbamol • Multivitamins • Minerals • Activated charcoal • Adrenalin
Wastes associated with treatment	May include, but not limited to: • Disposable masks, gloves and overshoes • Absorbent pads • Sharps (needles, scalpels and blades) • Contaminated dressings • Clinical gloves, contaminated PPE • Empty injection bottles and syringes

Evidence guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Implement work area policies, legislations, regulations and directives • Understand different categories and elements of non-infectious causes of animal diseases and problems • Recognize the signs and symptoms non-infectious diseases • Identify and treat animal poisoning problems and metabolic diseases • Identify the diagnosis and treatment protocols for the diseases and administer treatments • Identify the prevention and control methods for the non-infectious diseases • Maintain health and well-being of animals • Communicate effectively with clients and staff and provide advice to the clients
Required knowledge	Demonstrate knowledge of: • Organisational guidelines and procedures, including OHS and hygiene standards • Understand different categories and elements of non-infectious causes of animal diseases and problems • Signs and symptoms of animal diseases non- infectious diseases • Husbandry and service systems and their relation with disease/problem

	• Concepts of prevention and control of diseases non infectious diseases • Protocols for hazard identification and risk minimisation
Required Skills	Demonstrate skills to: • Follow organisational guidelines and procedures • Identify obvious signs & symptoms of non-infectious animal diseases • Apply appropriate treatment measure to eliminate non-infectious cause disease • Follow OHS and waste management procedures and other organisational guidelines and procedures; • Select and apply the procedures to perform a range of defined tasks; follow treatment instructions; and record accurately and legibly the information collected • Oral communication skills to fulfil the job role as specified by the organisation including questioning techniques, active listening, asking for clarification and consulting with supervisor • Complete arithmetic calculations and determine animal drug doses • Interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds • Problem-solving skills to use available resources & to prioritise daily tasks.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Identify and Handle Parasitic Diseases of Animals**
Unit Code	**AGR ANH3 02 0322**
Unit Description	This unit covers the knowledge and skills and attitude required to develop basic understanding on clinical and economic impacts of parasitic diseases, characterize, identify, treat and prevent/control important and prevalent internal parasitic disease of farm animals. The competence also covers the ability to recognize ecto-parasites of animals and manage associated health as well as ecological problems.

Element	Performance Criteria
1. Develop a general knowledge on parasitology and parasites	1.1. The clinical and economic ***impacts of parasitic diseases*** are introduced. 1.2. Statistical information on the current distribution and its implication of the disease in Ethiopian livestock sector are explained. 1.3. Public health significance of zoonotic parasitic agents are mentioned. 1.4. Parasites are categorized on the basis of Taxonomic classification. 1.5. ***Hosts*** and lifecycles of commonly prevalent parasites are explained.
2. Identify and handle internal parasitic diseases of animals	2.1. Aetiology, transmission, ecology, clinical sign, diagnosis, treatment and ***prevention/control measures*** of economically important and prevalent ***nematode parasitic*** diseases of farm ***animals***' are identified and implemented. 2.2. Aetiology, transmission, ecology, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent ***trematode parasitic*** diseases of farm animals' are identified and implemented. 2.3. Aetiology, transmission, ecology, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent **cystode parasitic** diseases of farm animals' are identified and implemented. 2.4. Aetiology, transmission, ecology, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent ***protozoan parasites*** diseases of farm animals' are identified and implemented.
3. Recognize ecto-parasites of animals and manage associated problems	3.1. Characteristic feature, stages of development, geographic distribution, clinical effect on animals, economic effect on animal product/by-product, treatment and

	prevention/control measures of important and prevalent ***tick*** of farm animals' are identified and implemented. 3.2. Characteristic feature, stages of development, geographic distribution, clinical effect on animals, economic effect on animal product/by-product, treatment and prevention/control measures of important and prevalent ***mites*** of farm animals' are identified and implemented. 3.3. Characteristic feature, stages of development, geographic distribution, clinical effect on animals, economic effect on animal product/by-product, treatment and prevention/control measures of important and prevalent ***cutaneous myasis,*** fleas***, flies, lice, true bugs*** and leech of farm animals' are identified and implemented.

Variable	**Range**
Impacts of parasites	May include, but not limited to: • Bleeding and blood sacking • Competition for food/ fluid • Mechanical Obstruction of GIT/ blood vessel/lymphatic vessel • Tissue damage/perforation • Cyste formation • Skin/hide damage • Production loss (milk, meat, egg,..)
Host	May include, but not limited to: • Definitive host • Intermediate host • Transport hosts (parathenic hosts) • Reservoir hosts/waiting host
Prevention method	May include, but not limited to: • Deworming, stable hygiene practices and quarantine procedures, rotational grazing, exclusion from infected areas and prophylaxis and treatment with drugs
Control	May include, but not limited to: • Giving curative and prophylactic treatments • Giving advice to the owner • Routine anthelmintic chemotherapy and prophylaxis • Deworming animal at least once at the start of dry season • Rotational grazing/ paddock rotation system be adapted • Maintain a high standard of stable hygiene • Control of vector, intermediate host • Control access of animal to infected water and grazing land Breeding resistant breed of animals

Animal	May include, but not limited to: • Bovine , Equine, Ovine, Caprine, swine • Camel, Canine, Feline, avian
Nematode parasites	May include, but not limited to: • Hamonchus,(wire worm) • Trichostrongylus • Dictyocaulus (Lungworm) • Strongylus • Bunostomum /Hook worms of ruminants) • Ancylostoma (Hook worm of small animals) • Ascarididae (Ascaris, Toxocara and Parasacaris) • Oxyuris (pin worms) • Thelazia (Eye worms): • Filaridea (para filarial and Diro filarial)
Trematod parasites	May include, but not limited to: • Fasciola • Paramphistoma • Schistoma
Cestoda	May include, but not limited to: • Taenia (cysticircus, coenurus, hydatid..) • Anoplocephala (*Moniezia, tyzanezia…)*
Protozoan parasites	May include, but not limited to: • Trypanosoma • Trichomonas • Coccidia- Emeriidae • Babesia • Toxoplasma • Amoeba • Balantidium
Ticks	May include, but not limited to: • Hard ticks (Ambylomma, Boophilus, Hyalomma, Haemaphysalis..) • Soft ticks (Ornithodoros, Argas)
Mites	May include, but not limited to: • Burrowing mites: Sarcoptes, Demodex • Non-burrowing mites: Psoroptes, Chorioptes,
Cutaneous myasis	Blowfly maggots of lucilia, phormia, calliphora,chrysomia..
flies	Tse tse fly, moisquitos, tabanus, clucoides..
lice	Damalina, linognatus, solenoptes, Haematopius,
Public and economic importance	May include, but not limited to: • Zoonotic importance • High animal mortality • Loss of production performance • Cost of treatment and control

	• International trade ban

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Classify parasites according to their mode of life cycle and infection • Identify eggs of different species of parasites • Diagnose and describe animal parasitic diseases • Identify drugs to use and apply treatment • Identify adult and microscopic parasites • Conduct laboratory tests and procedures to identify adult and eggs of different species of parasites • Identify and apply clinical signs related parasitic infestation • Site and collect sample for diagnosis of parasite or parasite eggs • Differentiate external and internal parasites • Identify haemo-parasites • Describe life cycle of at least commonly known parasites • Describe infective stage of parasites • Identify parasites with zoonotic and serious economic importance • Apply control strategies of parasites • Record and report information • Identify and use tools and equipment with respect to diagnosis and treatment of parasitic diseases
Required Knowledge and Attitude	Demonstrate knowledge of: • Basic principles of veterinary clinical diagnosis, parasitological and pharmacology. • Basic terminologies of animal health • Parasites classifications • External and internal parasites • Parasites with zoonotic and serious economic importance • History of the animal • Visual observation inspection, palpation, percussion and auscultation • Physical body parameters • Abnormal changes in the body • Sample for diagnosis • Basic principles of clinical and laboratory diagnosis • Control strategies and treatment of parasitic diseases • Principles and mechanisms of animal diseases control and

	prevention systems. • Work ethics, principles, and regulations of animal health • Relevant materials and equipment for identification • Information on parasite immunity to different classes of chemicals • Information reporting
Underpinning Skills	Demonstrate skills to: • Identify abnormal changes of body parts in animals • Differentiate animal diseases, external and internal parasites • Conduct laboratory tests and procedures to identify adult and eggs of different species of parasites • Identify and apply clinical signs related parasitic infestation • Apply control strategies of parasites • Identify and use tools and equipment with respect to diagnosis and treatment of parasitic diseases • Implement therapeutic and prophylactic treatments • Use different equipment/materials for animal handling, sample collection, diagnosis and treatment activities • Undertake sample collection and clinical and laboratory diagnosis • Accurately and legibly interpret the information collected • Oral communication skills to fulfil the job role as specified by the organisation including questioning techniques, • Problem-solving skills to use available resources and prioritise daily tasks.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Identify and Handle Infectious Diseases of Animal**
Unit Code	**AGR ANH3 03 0322**
Unit Description	This unit covers the knowledge and skills and attitude required to develop basic understanding on biology, characteristic feature and, clinical/economic/public health impacts of infectious microorganisms. It also requires the trainees' ability to classify, characterize and identify microorganisms which are threat of animal health through the use clinical examination and microbiological laboratory examination. In addition this competency covers trainees' skill to treat and prevent/control important and more prevalent microbial diseases animals.

Element	Performance Criteria
1. Develop basic knowledge on veterinary microbiology	1.1. The term microbiology is defined and ***infectious micro-organisms*** are group based on their biological similarity. 1.2. Infectious microorganisms are grouped in to sub classes and their ***respective characteristics*** are explained. 1.3. The clinical and economic impacts of parasitic diseases are introduced. 1.4. Statistical information on the current distribution and its implication of the disease in Ethiopian livestock sector are explained. 1.5. Public health significance of zoonotic parasitic agents is mentioned.
2. Identify and Handle Bacterial disease of animals	2.1. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent diseases of farm ***animals'*** caused by ***endo-spore forming bacteria*** are identified and implemented. 2.2. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of important and prevalent diseases of farm animals' caused by ***gram positive bacteria*** are identified and implemented. 2.3. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent diseases of animals' caused by ***gram negative bacteria*** are identified and implemented. 2.4. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent diseases of animals' caused by ***Enterobacteriacea*** are identified and implemented. 2.5. Aetiology, transmission, host preference, clinical sign,

	diagnosis, treatment and prevention/control measures of diseases of farm animals' caused by ***mycobacteria*** are identified and implemented. 2.6. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of disease of animals' caused by ***mycoplasma and rickettsia*** are identified and implemented. 2.7. Aetiology, classification, transmission, clinical sign, diagnosis, treatment and prevention/control measures mastitis are identified and applied.
3. Identify and Handle viral disease of animals	3.1. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent diseases of animals' caused by ***DNA viruses*** are identified and implemented. 3.2. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of economically important and prevalent diseases of animals' caused by ***RNA viruses*** are identified and implemented
4. Identify and Handle Fungal disease of animals	4.1. Aetiology, transmission, host preference, clinical sign, diagnosis, treatment and prevention/control measures of economically important diseases of animals' caused by ***fungal organisms*** are identified and performed.

Variable	**Range**
Animals	May include, but not limited to: • Bovine , Equine, Ovine, Caprine, swine • Camel, Canine, Feline, avian
Biological categories of infectious microorganisms	Are limited to: • Bacteria • Virus • Fungus
Explanation based on respective characteristics	May include, but not limited • Biological and genetic makeup • Reproduction and growth characteristics • Nutritional requirement • Shape/ morphology • tissue tropism and host preference • Disease development
Endo-spore-forming bacteria	May include, but not limited to: • Clostridium • Bacillus

Gram positive	May include, but not limited to: • Streptococcus • Staphylococcus • Listeria • Corynebacteriun
Gram negative	May include, but not limited to: • pasteurella • Brucela • Moraxella
Enterobacteriace	May include, but not limited to: • salmonella species • Escherichia coli • Yesinia
Rickettsia	May include, but not limited to: • Rickettsia • Ehrlichia • Coxieilla
DNA viruses	May include, but not limited to: • Pox viruses (LSD , cow pox, sheep/goat pox, orf, avi-pox /fowl pox, swine pox, camel pox, small pox) • Herpes viruses (Equine herpes viruses (EHV), Infectious bovine rhinotracheitis, Marek's disease, malignant catarrhal fever (MCF), and Avian infectious laryngotracheitis virus). Herpes simplex and varicella zoster-in human
RNA viruses	May include, but not limited to: • FMD virus • NCD (Newcastle diseases virus) • PPR (Pest des Petites Ruminants) • Influenza virus • Rabies virus • Rotavirus, AHS virus, Blue tongue virus • IBR (infectious Bursa disease)
fungal diseases	May include, but not limited to: • Dermatoyhytosis, • Aspergillosis • Epizeotic lymphangitis • Candidiasis • Histoplasmosis

Evidence Guide

Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Differentiate between bacteria, viruses and fungi based on the biology, transmission and responses to antibiotic treatments • Identify different groups of infectious microorganisms • Recognize the signs and symptoms, and mode of transmission of major ruminant, poultry and swine diseases (infectious and non-infectious) • Identify and collect appropriate specimens for specific diseases • Identify the treatment protocols for the diseases and administer treatments • Identify the prevention and control methods for the diseases • Maintain health and well-being of animals • Maintain work environment and personal hygiene
Required Knowledge and Attitude	Demonstrate knowledge of: • Characteristic feature of bacteria, viruses and fungi • Principles of basic clinical and laboratory diagnosis • Disease and disease causative agent • Signs and symptoms of animal diseases • Husbandry and service systems and their relation with disease • The local climatic and agro ecological conditions • Concepts of prevention and control of diseases • Protocols for hazard identification and risk minimisation
Required Skills	Demonstrate skills to/in: • Apply organisational guidelines and procedures • Identify obvious signs & symptoms of animal diseases • Performing clinical and laboratory diagnosis • Apply various prophylactic and therapeutic treatment patterns • Select and apply the procedures to perform a range of defined tasks; follow treatment instructions; and record accurately and legibly the information collected
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Provide Routine Veterinary Clinical Service**
Unit Code	**AGR ANH3 04 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to prepare materials, equipment, work area and perform routine clinical examination of animals. It also comprises knowledge and skill to treat basic animal problems and conduct post treatment advice to the owner of animals.

Element	Performance Criteria
1. perform general and systemic clinical examination	1.1. ***Working area, Materials, equipment and tools*** used for clinical services are prepared and applied according to the enterprise guide lines 1.2. The ***animal*** is captured and or restrained and made ready humanely and safely for ***clinical examination***. 1.3. Detail case history is recorded in consultation with the owner. 1.4. ***General Clinical examination*** are carried out according to the standard operating procedures 1.5. ***Systemic Clinical examination*** are carried out according to the standard operating procedures 1.6. Abnormalities and behavioral changes of the animal are observed, recorded and reported. 1.7. Samples are collected in accordance with the standard operating procedures. 1.8. Based on the diagnostic finding cases are handled in consultation with supervisor of veterinarian.
2. Prepare and Provide basic treatment to clinical cases	2.1. Animals are safely handled and restrained without causing harm or injury to animal or handler. 2.2. Information on past treatment is sourced from the individual animal's health tag/s and case books 2.3. Equipment and materials and treatment site are prepared based on finding 2.4. Drug type, route of administration and frequency of treatment are determined and prepared based of clinical examination finding. 2.5. A***nimal treatments*** are provided hygienically and consistently according to manufacturer's specifications or veterinary advice. 2.6. Treated animals are identified from non-treated animals by recording the date
3. Provide specific clinical care advice	3.1. Primary clinical and non-clinical care advice is provided to animal owner as required in consultation with supervising veterinarian. 3.2. care advice on ensuring overall health of livestock through good nutrition and reducing stress. 3.3. The animal owner give advice on sticking to the withdrawal period of drugs to make sure that farmers are taking care of their animals, their families, and your families.

Variable	Range
Materials equipment and tools	May include, but not limited to: • Disinfectant, swabs, gloves and gowns, goggles and boots, head

	mask, thermometer, percussion hammer, Stethoscope, rope,
Animal	May include, but not limited to: • Ruminants • Poultry • Swine • Camel • Equine • Wild animals and Companion animals
PPE	May include, but not limited to: • Boots, hats/hard hat, overalls, gloves, protective eyewear, hearing protections, respirator or face mask, sun protection (sun hat, sun screen), and rectal glove
Work area	May include, but not limited to: • Open-air clinic/stationary veterinary clinic • Mobile veterinary service area • Vet hospital
Clinical examination	May include, but not limited to: • Both general and systemic clinical examination of animals based on the assessment of general body condition and body score of the animal, temperature reading ,palpation , auscultation, pulse rate, respiratory rate heartbeat and mucus membrane examination.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Prepare materials, equipment, work area and animals for clinical operations • Undertake both general and systemic clinical examinations. • Apply animal treatments considering right dosage regime of drugs. • Monitor either outpatient or animals under custody in clinic, and communicate effectively with supervisors and follow instructions • Apply relevant organizational guidelines and procedures • Effectively use technical terms • Capture, handle and restrain animals
Required Knowledge	Demonstrate knowledge of: • OHS and hygiene standards • Work ethics, principles, and regulations of animal health • Basic behaviour of animals • Common clinical signs of diseases (loss of appetite, depresion lacrimation, coughing ,diarrhea, temperature rise, lesions, lameness, salivation and others)
Required Skills	Demonstrate skills to/in: • Apply relevant organizational guidelines and procedures • Capture, handle and restrain animals

	• Diagnose sick animals • Implement prophylactic treatments • Use different equipment/materials and tools for animal handling and diagnosis activities • Record-keeping and reporting skills • Clean and sanities equipment and materials • Oral communication/language competence to fulfil the job role as specified by the Organization including questioning techniques, Active listening, asking for clarification and consulting with supervisor
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Perform Pre-Surgical Operative Procedures and Wound Management Activities**
Unit Code	**AGR ANH3 05 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to understand basic knowledge on surgical terminologies, and classifications, surgical materials and equipment, suturing, knotting and ligation as well as general pre-surgical operative preparations and procedures. It also covers the ability to carry out management of different types of wounds and abscesses in animals.

Element	Performance Criteria
1. Acquire basic knowledge on veterinary surgery	1.1 The definition , clinical importance and technical classification of surgery are described 1.2 General surgical equipment (surgical pack) and suture materials are mentioned 1.3 Circumstantial ***suturing, knot and ligation techniques and pattern*** are understood and practiced. 1.4 Common terminologies related to ***anaesthesia*** are defined 1.5 Varity types of commonly used veterinary ***anaesthetic medications*** are mentioned and described.
2. Perform preoperative surgical preparations	2.1. Safe work practices and work place policies are implemented to minimize ***Hazard*** associated with preoperative preparations of the patient animal. 2.2. Vital pre-surgical considerations including, ***preadmission, owner communication, consent form*** and admission of the patient animal are conducted in assisting major veterinary surgical operation. 2.3. ***Preparation*** of ***surgical equipment*** and ***operation theatre-premises*** are performed following organizational rules and standardized surgical operative guidelines. 2.4. ***Preparation of the surgeon*** is considered before assisting in major surgical operation. 2.5. Safe restraining of the animal, ***premedication*** and ***surgical site preparation*** is carried out. 2.6. ***Pre-operative patient monitoring*** is implemented following guidelines and precaution. 2.7. Different ***methods anaesthesia applications*** are implemented for different purposes of surgery**.**
3. Perform wound management activities	3.1. Hazard associated with animal handling/ wound management are identified and OHS procedures are followed. 3.2. Contextual meaning of wound are defined, ***types of wound*** are identified and explained. 3.3. Initial examination and ***wound assessments*** are carried out to

	determine affected blood vessels, nature and extent of injury. 3.4. ***Treatment*** and other management procedures for different types of wound are applied following ***basic Principles of wound Treatment.*** 3.5. Causes and ***classification of abscess*** in farm animals are explained. 3.6. Effective Procedures for lancing and treatment of abscesses are applied. 3.7. Animal are released after parenteral antibiotic medications and owner are given animal care advice. 3.8. Wastes are identified and deposed off following organizational rules and standard waste disposal guidelines 3.9. Work area and surgical equipment are cleaned, disinfected, maintained and stored in accordance with clinic policies.

Variable	**Range**
Suture technique	May include, but not limited to: • Inverting • Everting • Apposing
Suture pattern	May include, but not limited to: • Continuous (simple continuous, lock stitch, sub-cuticular, purse string, Cushing, Connell, lambert) • Interrupted (simple interrupted, cruciate, horizontal mattress, vertical mattress, near-far-far-near)
Knot technique	May include, but not limited to: • Granny • Square • Surgeon • Re-enforced surgeon
Ligation technique	May include, but not limited to: • Simple/single • Trans fixation • Triple clamp
Anaesthesia terminologies	May include, but not limited to: • Anaesthesia • Analgesia • Tranquilization • Sedation • Hypnosis • Narcosis • Balanced anaesthesia • Dissociative anaesthesia
Types of anaesthetic medications	May include, but not limited to: • Local anaesthesia • General anaesthesia (parenteral, inhalant)
Work place Hazard	May include, but not limited to:

	• Animal bites, kicks, scratches and crush injuries • Biological hazardous waste and sharps disposals • Handling of chemicals and medicines • Manual handling, including carrying, lifting and shifting • Needle pricks and cuts from other sharps • Release of infective agents (animal and human) • Zoonoses
Pre-admission	May include, but not limited to: • register owner information (name and address) • Register patient information(spps, breed, sex, age, wt, color) • Take patient history • Take full clinical examination
Owner communication	May include, but not limited to: • Clinical diagnostic finding • Surgical procedure to be carried out • Prognosis • Cost of treatment • Willingness of the owner on the surgical treatment
Consent form (agreement paper)	May include, but not limited to: • Name of the clinic • Date • Owner name and address • Patient information • Clinical and laboratory examination result • Vaccination and medication information • Willing to cover cost of surgery • Signature
Preparation of surgical materials	May include, but not limited to: • Identification • Collection • Cleaning • Disinfection • Sterilization • drying
Surgical material and equipment (surgical pack)	May include, but not limited to: ➢ Swabs, drapes, cotton wool, gauze ➢ Different types of scissors, forceps, suturing needles, needle holders, resection clamps, scalpel handle and blade ➢ suture materials ➢ Instrument table and tray ➢ Hoof trimmer, hoof rasp, hoof pick, ➢ Dehorning wire, dehorning sow, ➢ Large animal and small animal burdizo, emasculator, elastrator ➢ Stomach tube, trocar and canula,

Preparation of operation theatre and premises	May include, but not limited to: • Daily cleaning and sterilization • Cleaning and sterilization after each and every surgery • Air conditioning in the surgical room • Preparing materials like operation table and shadow less lamb in the operation room ❖ Operation theatre can have different classes like patient preparation room, tools and equipment cleaning and sterilization room, store, surgeon scrub room, surgical operation room, patient animal recovery and health care room.
Preparation of the surgeon	May include, but not limited to: • Scrubbing • Antisepsis • PPE wearing for surgery
premedication	Behavioural modification before restraining and minimization of anaesthetic complication using drugs like Atropine sulphate, diazepam, Acepromazine, Promazine and xylazine.
Surgical Site preparation	May include, but not limited to: • Animal restraint • Positioning of the patient. • Hair/fur clipping, • Washing, • Shaving, • Washing • Antisepsis
Pre-operative patient monitoring	May include, but not limited to: • Record of necessary information • Withholding from feed and water • Shifting animal to operation theatre and positioning on operative table • Giving anaesthetic medication, Iv administration of fluid if necessary • Monitoring CV,RS, body temperature) and • Aseptic draping
Methods anaesthesia applications	May include, but not limited to; • Local –topical,, Infiltration (field block, inverted “L”, “T” block) • Regional (paravertebral, para-lumbar, epidural, peri-neural, tourniquet-intravenous)... • General (intravenous, intramuscular, gas inhalant)
Types of wound	May include, but not limited to: • Clean wound (aseptic) • Clean contaminated wound • Contaminated wound • Infected (maggot) wound
Basic principles of wound management	Are limited to: • Maintenance of aseptic conditions

	• Careful debridement • Proper irrigation of wound • Gentle handling of tissues • Layer by layer closure avoiding tissue tension. • Careful hemostasis. • Avoiding the use of irritant materials. • Proper drainage. • Application of protective bandage
Classification of abscess	May include, but not limited to: • Deep • superficial

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Prepare animals for scheduled operations in accordance with clinic policies and procedures. • Vital Pre surgical considerations are followed • Identify surgical materials • Preparation of surgical equipment and materials • Surgical site preparation on the animal • Transfer animals safely to and from surgery • Prepare theatre or surgical operating area for use • Suturing and ligation techniques • Application of anaesthesia • Care for animal pre- and post-operatively • Management of different categories of wound • Clean and sterilize theatre and equipment after surgery • Communicate effectively with the veterinarian and veterinary nurse and follow instructions.
Required Knowledge and Attitude	Demonstrate knowledge of: • Surgical operation terms • Vital pre-surgical considerations and its importance • Terminologies associated to anaesthesia • Types of anaestesia • Types of wound and abscess • Aseptic techniques • Clinic policies and procedures, including OHS requirements • General theatre etiquette, dress rules and 'no-go' areas • Legislative requirements and health regulations for the storage, use and disposal of chemicals and biological debris from veterinary procedures • Possible requirements of the veterinarian during operations • Range of equipment required in both the preparation and theatre areas

	• Veterinary terminology pertaining to patient observation.
Required Skills	Demonstrate skills to: • Restrain animals • Preparation of surgical equipment and materials • Surgical site preparation on the animal • Transfer animals safely to and from surgery • Prepare theatre or surgical operating area for use • Suturing and ligation techniques • Application of anesthesia • Management of different categories of wound and abscesses • Safely dispose of biological hazardous waste and sharps • Use disinfectants and cleaning agents correctly and apply appropriate cleaning and sterilizing techniques • Use, and record the use of, chemicals and medicines in accordance with relevant state or territory legislation. • Literacy skills to read, select and apply policies and procedures, including OHS and other clinic policies and procedures; follow sequenced written instructions; and record accurately and legibly patient details • skills to use available resources and prioritize daily tasks
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Identify and Handle Pests, Predators and Diseases of Honey Bee Colony**
Unit Code	**AGR ANH3 06 0322**
Unit Description	This unit specifies the knowledge to understand biology and behavior of honey bee, skills and attitude required to inspect a honey bee colony for indicators of disease or evidence of pests, and take appropriate follow-up action. It also comprises trainees' ability to prevent and control diseases and pests of honey bee colony.

Element	Performance Criteria
1. Understand biology and behavior of honey bee	1.1 Basic information on biology of honey bee is described. 1.2 Developmental stage and work duties are mentioned 1.3 Caste system (social status) in the honey bee colony is discussed. 1.4 Feeding and communication behaviour in society of honey bee is discussed. 1.5 Characteristics of common ***Honey bee races in Ethiopia*** are described.
2. Asses health condition of honey bee colony	2.1. Suitable ***PPE*** are selected and checked according to the organizational regulation. 2.2. ***Tools and equipment*** required to open a hive are selected and checked according to the organizational guideline. 2.3. ***OHS hazards*** associated with opening a hive are identified and actions taken according to the organizational guideline. 2.4. ***Disease*** signs *in* ***the*** brood, adults, poor or irregular flight patterns and dead or dying bees around hive entrance are inspected and appropriate authorities are notified. 2.5. Brood is inspected for evidence of ***pests and parasites*** and, where found, appropriate action is taken and appropriate authorities are notified as required by legislation. 2.6. Adult bees and brood combs are observed for signs of disease and, where notifiable disease is present, appropriate authorities are informed as required by legislation and appropriate action is taken. 2.7. Signs of disease or pest that adult bees face are identified. 2.8. Appropriate samples for testing are collected, packed and shipped to the laboratory as per prevailing regulations and evidence is gathered to support a diagnosis according to relevant standards and protocols

	2.9. Appropriate samples for testing are collected, Labeled, packed and shipped to the laboratory according to the regional laboratory protocol; evidence is gathered to support a diagnosis according to relevant standards and protocols.
3. Prevent and control diseases and pests of honey bee colony	3.1. Prevention and control methods of honey bee colony diseases and pests are identified and applied according to the organizational guideline 3.2. Appropriate PPE clothing and equipment is provided, used and maintained in accordance with enterprise procedures and OHS requirements. 3.3. Drugs and chemicals used in the treatment and control of diseases and pests of honey bee colony are identified and handled according to the organizational guideline. 3.4. Infestations/infections are monitored and treatments are applied according to *OHS standards* principles, business requirements, veterinary guidelines and sound bee keeping practice and enterprise procedures. 3.5. Biosecurity measures are implemented according to enterprise biosecurity plans and instructions from appropriate authority. 3.6. Results of inspections and any remedial action taken are recorded and used as the basis for future beekeeping operations. 3.7. Treatment programs are modified where necessary and when dictated by progress. 3.8. Appropriate approval is obtained for use of restricted chemicals. 3.9. Senior personnel are notified promptly of significant changes to treatments and/or when business implications dictate. 3.10. Notifiable diseases are identified and regulatory requirements are complied with the industry requirement. 3.11. Records are maintained as required by industry and enterprise guidelines.

Variable	**Range**
Honey bee races in Ethiopia	May include, but not limited to: • Apis mellifera jemenitica • A.m. scutellata • A.m. bandasii • A.m. monticola • A.m. woyi-gambella

PPE	May include, but not limited to: • Bee-proof overalls and gloves • Steel capped boots/shoes • Sunhats • Bee veils • Sunscreen lotion.
Tools and equipment	May include, but not limited to: • Bee blower • Bee smoker • Brush • Buckets and wheelbarrow • Detergent • Glass slides, jars or cages for adult bee samples • Geographic Positioning System (GPS) equipment • Compass and detailed locality maps • Hive tool • Hives • Loading and unloading equipment • Queen excluder • Vehicle
OHS hazards	May include, but not limited to: • Bee stings • Manual handling and lifting of heavy hives.
Diseases	May include, but not limited to: • Diseases affecting brood and adult bees: • American foulbrood • European foulbrood • Sac brood • Other viral diseases like Nosema and Chalk brood • Action taken must include complying with government • Legislation regarding notification.
Pests and parasites	May include, but not limited to: • Pests and parasites affecting brood and adult bees: • Acarine • Braula coeca • Tropilaelaps • Varroa • Action taken must include complying with state or territory

Pests	May include, but not limited to: • Common pests in or around hives, including: • Ants and spiders • Bee-eating birds • Cane toads • European wasps • Mice • Small hive beetles • Wax moths • If pests are discovered, action should be taken to control • Problem or move colony to another location.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Understand biology of honey bee • Inspect hive and colony for signs of disease and ill thrift • Identify key signs and symptoms of disease and pests that may affect brood or adult honey bees • Undertake remedial action to ensure colony is maintained in healthy and productive condition for intended use. • Prevention and control of honey bee colony diseases and pests
Required Knowledge and Attitude	Demonstrate knowledge of: • Bee colony pests/diseases • Signs of endemic and exotic disease and pests of honey bees and treatments • Mode of spread of pests/diseases and level of risk to beekeeping • Tools and equipment for the purpose non-allowable inputs for organic honey production.
Underpinning Skills	Demonstrate skills to: • Identify pests and diseases of honey bee • Inspect broods and Prepare supplementary feeds • Undertake remedial action to ensure colony is maintained in healthy and productive condition for intended use. • Prevention and control of honey bee colony diseases and pests Work safely around bees.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Identify and Handle Pest, Predator and Disease in Fish**
Unit Code	**AGR ANH3 07 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to describe Basic information on biology and anatomy of fish that helps to inspect fish for indicators of disease or evidence of pests, and take appropriate follow-up action. It also requires expertise to treat and prevent pest, diseases and predator of fish following safety rules and considering environmental implication in the use of chemical agents as a treatment control method.

Element	Performance Criteria
1. Understand biology and behavior of fish	1.1. Basic information on biology and anatomy of fish is described. 1.2. Reproduction pattern of fish are defined. 1.3. Information feeding behavior of common and important fish species are defined.
2. Diagnose predator, pest and disease infestations	2.1. Appropriate ***PPE clothing and equipment*** are provided, used and maintained in accordance with enterprise procedures and OHS requirements. 2.2. Hazard identification, assessment and risk control procedures for the workplace are implemented and monitored using the hierarchy of control model, legislative requirements and enterprise and workplace procedures. 2.3. Pest, predators and diseases of fish are identified in relation to the work place. 2.4. Fish Stock is monitored for a range of health problems which support a systematic and comprehensive analysis of available symptoms in accordance with enterprise procedures. 2.5. Where appropriate, sick fish Stock are ***diagnosed*** and professional advice is obtained where the complexity of the problem or the severity of infestation dictate. 2.6. ***Disease*** outbreaks are investigated and stock deaths reported in accordance with enterprise procedures. 2.7. Specimens for external analysis are collected, labeled, packaged and sent to laboratories, according to laboratory specifications. 2.8. Based on the confirmatory diagnosis obtained from sample processing, treatment is given according to the nature of the problem. 2.9. Conclusions are drawn from relevant information based on appropriate evidence and reasoned decisions.
3. Implement treatment, control and prevention measures against predators, pests and	3.1. Treatments are applied according to OHS standard principles, veterinary guidelines, business requirements and sound aqua cultural practice. 3.2. With holding periods are compiled according to the drug company's

diseases of fish	description. 3.3. Treatment programs are modified, where necessary and when dictated by progress. 3.4. Senior personnel are notified promptly of significant changes to treatments and/or when business implications dictate. 3.5. Notify able diseases are identified and regulatory requirements are complied with the Government requirement. 3.6. Records are maintained as required by government requirements and industry requirements and enterprise guidelines. 3.7. Prevention and control methods of fish diseases, predators and pests are identified and implemented according to the organizational guideline 3.8. Preventative measures selected and implemented ***control measures*** suited to infestation/infection are identified from stock health plan. 3.9. ***Predator, pest*** and ***disease control methods*** suited to environmental conditions, severity of infestation, marketing and legislative requirements and business circumstances are chosen.
4. Monitor and review cleanup activities and operations	4.1. Moribund or dead stock are collected and disposed of in accordance with veterinary guidelines, enterprise procedures, government requirements and ***Ecologically Sustainable Development (ESD) principles.*** 4.2. Clean up activities are carried out following ESD principles. 4.3. Repairs and maintenance are undertaken on equipment and report prepared and conveyed to senior personnel.

Variable	**Range**
PPE Clothing and Equipment	May include, but not limited to: • Gloves, • Boots, raincoat • Sunhats, sunglass, sunscreen creams • Gown, overalls (water proof) • Wader • Life saver jacket • Capturing net
Diagnosis	May include, but not limited to: • Visual • Microscope • Binocular • Stage • Dissection of fishes
Diseases	May include, but not limited to: • Diseases of fish: ➢ Viruses, bacteria, fungi, worms, crustacean parasites ➢ Toxicants (chemicals), toxins of biological origin (such as toxic

	algae) ➢ Symbionts.
Control measures	May include, but not limited to: • Elimination (shooting or chemical poisoning) • Deterrence (traditional, biological or environmental) • Capture and relocation • Exclusion
Predator pest	May include, but not limited to: • Competitors (food, space, shelter, oxygen) • Alligator and crocodile • Human (poachers) • Snakes, python • Amphibians, otter, reptiles, birds, • Water plants and microalgae • Weeds. • Blowfly, maggots ,Lice, leeches
Predator disease control methods	May include, but not limited to: • Firearms and power heads • Air guns and other auditory measures • Scare lines and kites • Traps • Netting, fences and exclusion devices, barriers (mechanical, electrical) • Biological (such as hawks, dogs) • Human activity • Bathing (fresh or salt water) • Chemical baths • Medication in food • Vaccination • Biological, probiotics • Chemical barriers (foot baths etc) • Disinfection of equipment • Deprivation/purging • Filtration • Replace susceptible species with resistant species • Reduce stress.
ESD principles	May include, but not limited to: • Animal welfare ethics • Translocation of species • Protected species • Disposal of waste material • Disposal of moribund/dead stock
Pest control methods	May include, but not limited to: • Exclusion • Filtration and ozonation

	• Biological control (such as cleaner fish) • Chemical control.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Select pests, predators or diseases control methods, in line with enterprise guidelines • Respond to outbreaks by pests and diseases or attack by predators • Characterize , signs and symptoms of predators, pest and disease infestations of culture species • Describe life cycles, physiology and behavior of families of predators • Characterize pathogenic and non-pathogenic diseases • Methods for prevention and control of outbreaks of pests, predators and diseases
Required Knowledge and Attitude	Demonstrate knowledge of: • Normal/abnormal stock behavior • Importance of good water quality • ESD principles • Characteristics, signs and symptoms of predators, pest and disease infestations of culture species • Life cycles, physiology and behavior of families of predators • Characteristics of pathogenic and non-pathogenic diseases and how to identify common types • Options for exclusion and scaring methods which do not deliberately harm predators and pests • Treatment methodologies, behavior characteristics, withholding periods of various common treatment programs • Alternate combinations of treatment methodologies • Local and regional based priorities for the use of chemicals in the control of infestations • Chemical and non-chemical control measures for use and application in the fisheries • OHS requirements relating to overseeing the control of predators, pests and diseases
Required Skills	Demonstrate skills to: • Assess signs of stress in fish • Diagnose predator, pest and disease infestations • Select control measures for the treatment of predators, pests and diseases • Apply treatments to predators, pests and diseases • Review risk of predators, pests and diseases attack • Review predator, pest and disease control programs • Supervise staff assisting with the control of predators, pests and diseases • Read stock health plan, labels, laboratory reports • Label samples

	• Write reports for management • Record information on enterprise data sheets • Fill out regulatory forms • Use titration equipment and volumetric pipettes • Estimate infestation severity • Calculate dose rates for medication/chemicals • Analyze the cost effectiveness of medication/chemical usage
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Provide First Aid and Respond to Emergencies for Animals**
Unit Code	**AGR ANH3 08 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to recognize emergencies, provide basic first aid broad spectrum of situations incidents and implement emergency care life support measures to animals. It also comprises knowledge and skills required to euthanize sick, injured or unwanted animals in a humane way that complies with safe operating practices and with ethical, welfare and legislative requirements.

Element	Performance Criteria
1. Assess emergency situation and provide basic first aid	1.1 ***Aims of fist aid*** are described 1.2 ***Emergency situation*** is recognised according to organizational manual. 1.3 ***Risk posed to self***, ***others and animals*** is assessed following standard guideline. 1.4 OHS procedures and safe working practices are applied including the selection of ***PPE*** to suit the emergency situation. 1.5 ***Tools and equipment for safety*** and ***first aids kits*** required for emergencies are selected, used, maintained and stored in good order. 1.6 Animal is handled safely and humanely using available resources. 1.7 ***Physical condition and vital signs*** of the animal are assessed according to organizational guideline 1.8 ***Options for assisting animals*** are evaluated and procedures selected with reference to workplace protocols and regulations 1.9 ***Basic first aid*** care is provided following ***ABC*** rule and ***First aid assistance*** is sought from others as appropriate and required. 1.10 Serious cases that need further treatment and correction are referred to veterinary clinic for further process 1.11 All first aid support activities are documented and reported to supervisor and completed on referral slip

2. Provide emergency care to animals	2.1. Clinic policies and procedures for the treatment of emergencies are developed in consultation with the supervising veterinarian. 2.2. ***Patient evaluation*** is conducted to assess injuries and vital signs of the patient animal. 2.3. Relevant ***procedures for hemorrhage control*** or breathing assistance are applied according to patient needs. 2.4. Emergency procedures and nursing care are applied as required in accordance with patient needs and OHS requirements. 2.5. Casualty is reassured in a caring and calm manner and made comfortable using available resources. 2.6. Euthanasia is recommended in cases of untreatable sever pain to relieve from further suffering , uncontrollable and profuse bleeding.
3. Undertake euthanasia in essentials conditions	3.1 The definition and situations for recommending euthanasia are explained. 3.2 Methods of euthanasia and material (chemicals)use in the process are mentioned. 3.3 Animal intended for ***euthanasia*** is identified and method for euthanasia is decided in consistent with legislative requirements. 3.4 ***Equipment*** and materials required for euthanasia are kept and prepared in accordance with legislative requirements. 3.5 Hazards associated with the euthanasia are identified and PPE/safety equipment are prepared and used in accordance with ***statutory requirements*** and industry practices. 3.6 Animal is physically restrained and Euthanasia is applied in a way that minimises its pain and distress. 3.7 Euthanasia procedure is monitored to ensure that the animal's death is rapid and without complications or undue suffering. 3.8 Carcass and biological waste not required for further investigation/research purpose are disposed of in accordance with organisational guidelines and procedures and legislative requirements. 3.9 Equipment and materials are disposed of or are decontaminated, cleaned and stored in accordance with standard operating procedures. 3.10 ***Records*** relating to the euthanized animal are kept.

Variable	**Range**
key aims of first aid	May include but not limited to: • Preserve life • Prevent further harm • Promote recovery
First aid kit	May include but not limited to: • Isopropyl alcohol 3% hydrogen peroxide • Scissors • Petroleum jelly

	• Ice pack • Activated charcoal • Syringe • Gauze • Cotton rolls • Adhesive tape • Cohesive bandages • Antibacterial ointment • Antiseptic soap • Antiseptic solution • Sterile saline • Bandaging scissors • Latex exam gloves • Leg wraps • Hemostats and forceps • Pliers to pull nails • Rectal thermometer • Stethoscope • Iodine
PPE	May include, but not limited to: • Glove, overall, boots, hat, respirator, safety eye washes and safety showers.
Animal emergency	May include, but not limited to: • Fire, hazardous releases, fuel spillage, gases, chemical spills, road accidents, injury from machinery and equipment, fall, climbing accident, snake bite or poisoning, respiratory or cardiac arrest, and electrocution, injuries • Haemorrhage • Bleeding from nose, mouth, rectum, coughing up blood, or blood in urine • Choking, difficulty breathing or nonstop coughing and gagging • Inability to urinate or pass faeces (stool), or obvious pain associated with urinating or passing stool • Seizures and/or staggering • Fractured bones, severe lameness or inability to move leg(s) • Obvious signs of pain or extreme anxiety • Heat stress or heatstroke • Severe vomiting or diarrhoea • Dystocia • Hypocalcaemia • Chock • Bloat • Unconsciousness
Patient evaluation	May include, but not limited to:

	• Airway and breathing status • Respiratory rate • Bleeding • Capillary refill TI • Heart rate • Hydration status • Level of consciousness • Mucous membrane color • Pulses • Pupillary light reflex • Temperature
Emergency first aid advice	May include, but not limited to: • Controlling hemorrhage • Clearing airway • Giving fluids for caustic ingestion • Identifying poison evidence: Snakes, toads, ticks, rat bait, snail bait, flea collars and organophosphate pesticides • Leaving penetrating foreign bodies
Drugs and chemicals	May include, but not limited to: • Antibiotics, anthelmintic, anti-inflammatory drugs and anesthetics, analgesics, chemicals and reagents
Hazards	May include, but not limited to: • Biological, chemical, mechanical, electrical, thermal, explosive, structural, climatic, psychological (e.g., critical incident stress),, proximity of other people, vehicles and machinery, fire, gas, fumes, electrical situations, animal injury, security related and wildlife related situations.
Injuries	May include, but not limited to: • Shock, external bleeding, burns, limb, abdominal and pelvic injuries, head and neck injuries, poisoning, bites and stings, facial injuries and management of a casualty with chest pains, diabetes and collapses, choking, drowning, swollen neck, asthma, not breathing, chest injury, hit by a motor vehicle or injured by machinery and equipment.
Procedures for haemorrhage control	May include: • the use of digital pressure, pressure bandages, and haemostatic forceps
ABC	May refers: • Air way, Breathing and Circulation
First aid care	May include, but not limited to: • Stop bleeding • Administer oxygen • Minimize impact of shock by keeping animal quiet, warm and away from activity or noise • Immobilize limb injuries, if soft tissue damage or fractures are suspected, if possible

	• Hose or apply water, if available, in cases of burns or heat exhaustion • Administration of emetics or antidotes under instruction if appropriate • Feeding or watering as advised • Transporting animal to veterinary assistance as soon as possible
Emergency situation reports	May include, but not limited to: • Observation, verbal, emergency warning system, emergency alarm system, hand signals, verbal reports, telephone communications, radio communications and whistles.
Workplace procedures	May include, but not limited to: • Search procedures (search of likely routes followed, • Systematic search, voice or whistle contacts), evacuations, use of isolating equipment, prevention of escalation of risk, containment, clean up, administering of first aid, assistance to injured team member, retrieval of team member and activity-specific rescue techniques.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Apply OHS legislative requirements, procedures and instructions that are to apply when providing first aid and emergency care • Implement hazard identification, assessment and control • Undertake patient evaluation • Differentiate common illnesses and injuries • Demonstrate practical first aid skills • Incorporating safe operating procedures into all instructions • Use drugs and chemicals • Use numeracy skills to measure vital signs
Required Knowledge	Demonstrate knowledge of: • OHS legislative requirements and codes of practice • Legal responsibilities and duty of care • Organizational and legal guidelines and procedures in the event of an accident/incident • Hazard identification, assessment and control • Patient evaluation • Use of drugs and chemicals • Principles and procedures for management of the following: emergency cases • Basic anatomy and physiology relating to: ➢ absence of normal breathing ➢ anatomy of the external chest ➢ physiology relating to response/consciousness ➢ upper airway anatomy and effect of positional change ➢ anatomy and physiology considerations in provision of first aid

	for specified conditions
Required Skills	Demonstrate skills to: • Accurately evaluate the emergency • Avoid/control escalation of the emergency • Render first aid care • Deal with contingencies • Communicate and follow instructions of supervisor • Identify hazard • Use drugs and chemicals • Assess vital signs • Calm and restrain affected/injured animal
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level III	
Unit Title	**Conduct Animal Health Extension and Community Veterinary Service**
Unit Code	**AGR ANH3 09 0322**
Unit Description	This unit covers the required knowledge, skills and attitude regarding to application of animal health extension and provision of veterinary community service during field attachment. To improve community awareness on animal disease control and prevention, and to insure community participation. It also requires recording and reporting provided community veterinary services.

Element	**Performance Criteria**
1. Perform awareness creation and disease control at community level	1.1. Community need assessment on ***veterinary extension issues*** are conducted and analysed. 1.2. The ***type of community*** and level of literacy are identified and used to select ***media of communication*** and ***approach*** 1.3. Awareness carination program are conducted at community level on ***locally prevailing disease.***

	1.4. Information on disease sources and transmission ways are delivered. 1.5. Importance of animal health care and early reporting of disease occurrence is explained 1.6. Locally available diseases that are economically destructive and those with zoonotic importance are described. 1.7. Participating community in the process of vaccination, mass treatment and crush construction are conducted. 1.8. Control of disease transmission resulting from mixing different herds of animals at grazing and watering points is carried out by participating the local community. 1.9. Available pictorial, post card, diagram or other demonstrable materials indicating harmful effects of the disease on animal health and the economy of farmers are used in the process of participation for the control of diseases. 1.10. Mobilization of community is carried during national disease surveillance program
2. Build a strategy on disease spared and Advocate New technology	2.1 Empowering the community in prevention of disease spread to new area is performed by early warnings and with prevention strategies 2.2 ***Participatory Rural Appraisal (PRA)*** strategy is used in habituating disease prevention strategy. 2.3 Advantage of integrated and small-scale farming is explained 2.4 Integrating community indigenous knowledge in transfer of ***new technology***. 2.5 Information on ***adding value chain*** on livestock and livestock product is delivered

3. Provide veterinary service to the community	3.1. Based on community need assessment, the ***type of veterinary service*** and ***work area*** identified. 3.2. ***Supportive document*** for field work is identified, prepared and approved by relevant body to facilitate the implementation of field work attachment. 3.3. Veterinary service provision at community is performed for specific period of time with in the ***community***. 3.4. During community veterinary service provision period, information associated with the geographical location, available veterinary services facilities, culture and taboos are identified and considered. 3.5. Service provide for community are well identified, recorded and reported based on institution guideline and format. 3.6. Community veterinary service provision are supported supervised, monitored and evaluated by immediate field supervisor based on institution guideline. 3.7. Whole provide community veterinary service are well recorded, reported and evaluated by institution against institution guideline and format, to confirm its implementations as per required standard. 3.8. The proper implementation of OHS and safety measures are issued throughout field attachment.

Variable	**Range**
Veterinary extension issues	May include, but not limited to: • Encouraging use of veterinary services, herd health management, information on central animal market, disease prevention strategies, community-based disease surveillance and vaccination campaign
Type of community	May include, but not limited to: • Socioeconomic level of the community, livening style, culture, livelihood
Media of communication	May include, but not limited to: • Face to face, Mass media (Radio, TV), printing material
Communication Approach	May include, but not limited to: • Individual base, in group, practical demonstration, lecturing, discussion
Locally prevailing disease	May include, but not limited to: • Common diseases appearing locally with distinguished clinical signs affecting animals repeatedly.
PRA strategy	• May include systematic and structured activity conducted by multidisciplinary team within an aim to acquire new information quickly and efficiently about rural life

New technology	• May include newly adopted technologies and research out puts intended to ease work activities of farmers, improved breeds,
Adding value chain	May include, but not limited to: • Place, time, physical change, increase utility
Type of Veterinary services	May include, but not limited to: • Treating injured or diseased animals in veterinary clinic • Treating injured or diseased animals in different types of animal production areas • Vaccination and deworming of animals • Provision of AI and pregnancy diagnosis in animals • Consultation of animal farm on heath management issues • Inspection of food of animal origin like in abattoir, dairy farm, poultry farm. • Community awareness creation on the prevention of zoonotic diseases (veterinary public health)
Work area	May include, but not limited to: • The proximity woreda, facilities, vet. Clinic, field work
Supportive document	May include, but not limited to: • Attachment letter for relevant body, work schedule, report forma, case reporting format, evaluation check list.
Community	May include, but not limited to: • Individuals and groups defined by organization programs and services • Other agencies providing services to the designated individuals and groups • People with specified needs and interests • People using the organization's services/programs

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Demonstrate effective communication skills • Perform Animal health extension at community level to create awareness animal health disease transmission, control and prevention. • Undertake participatory methods • Provide information for community animal disease • Undertake report writing • Develop knowledge of rural sociological norms • Conduct extension services delivery • Identify and used information associated to geographical location, available veterinary services facilities, culture and taboos of the community • Communicate with officials, veterinarians and the surrounding community • Apply a range of community development approaches.

	• Participate in the provision of veterinary service to the community • Provide diagnosis and treatment of injured or diseased animals in the community.
Required Knowledge and Attitude	Demonstrate knowledge of: • Communication and extension application • Organization's policies, strategic plans, guidelines related to the role of the work unit • Team works and consultation strategies • Disease profile in the local area • Up to date information on central market • The cultures, concerns, beliefs and aspirations of the community in question • The impact of cultural or community Attitude on appropriate roles, relationships and approaches of the worker • Possible hazards and OHS procedures in working areas of veterinary services in the community • legislations and guidelines on animal welfare, use of veterinary drugs and chemicals, as well as waste disposal • The impact of participating on animal health care activities in the community. • Work area and professional ethics in veterinary services.
Required skills	Demonstrates skills to: • Communication and Animal extension skill • Application of Organization's policies, strategic plans, guidelines related to the role of the work unit • Application of Team works and consultation strategies • Undertake research and consultation • Understanding and analyzing working information • Work with Communicate with officials, veterinarians and the surrounding community • Apply a range of community development approaches. • Participate in the provision of veterinary service to the community • Provide diagnosis and treatment of injured or diseased animals in the community. • Record and report veterinary service data in the community.
Resources Implication	Access is required to real situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices in the community.
Methods of Assessment	Competence may be assessed through: • Report evaluation • Interview/Oral Questioning
Context of Assessment	Competence may be assessed in the class/college hall

Occupational Standard: Animal Health Level III	
Unit Title	**Apply Digital Technology in Agriculture**
Unit Code	**AGR ANH3 10 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to Understand the Concept of digital technology, apply Digital technologies among rural population and recording and documentation system.

Element	Performance Criteria
1. Understand the Concept of digital technology	1.1. ***Digital technologies*** are understood to apply digital technology. 1.2. ***Importance of digital technologies*** are understood in agricultural sector 1.3. ***Role of digital technologies*** in agriculture is identified to enhance agricultural development. 1.4. ***Principles of Agricultural technology*** are identified to apply in the agricultural sector 1.5 Mobile/Smart phones and template functions are understood to collect data and use in the reporting system
2. Apply Digital technologies among rural population and farmers	2.1. Require ***tools and equipment*** are identified and coordinated to apply digital technologies 2.2. Digital technology ***infrastructures*** are identified to implement in agricultural development 2.3. Digital technology skills are developed among the rural population 2.4. Digital ***Agri-preneurial*** skill is developed for agricultural transformation. 2.5. ***Digital technology communication tools are*** used to collect data and reporting system 2.6. Digital technologies, tools and ***techniques*** are used to deliver digital education 2.7. Implementation of digital technologies is promoted to enhance productivity
3. Recording and documentation	3.1. ***Data collecting formats*** are developed based on the needs 3.2. ***Data collection methodologies*** are identified and selected based on the intended objectives 3.3. Collected data are organized, analyzed and interpreted based on the intended objectives 3.4. Organized, analyzed and interpreted data are documented and reported 3.5. Feedbacks are collected from the relevant stakeholders

Variable	Range
Digital technologies	May include, but not limited to: • Internet • Computer • Smart phone

	• Tablet • GPS • Web browser
Importance of digital technologies	May include, but not limited to: • Sharing and searching information • Collect data • Enable storage of massive information • Time saving • Cost minimizing • Data accuracy and reliability • Data centralizing and administration • Improve collaboration • Enhance creativity • Enhances work accuracy
Role of digital technologies	May include, but not limited to: • Create connectivity between operations • Facilitate communication in agricultural sectors • Globalize communication • Strengthen market linkage
Principles of Agricultural technology	May include, but not limited to: • Design with user • Understand the existing ecosystem • Design for scale • Build for sustainability • Data driving • Reuse and improve • Address privacy and security • Collaborative
tools and equipment	May include, but not limited to: • Chargers • Computer • Smart phone • Tablet • I pad • GIS • Website • Online resources • Digital programs
infrastructures	May include, but not limited to: • Telecommunications utilities • Electricity power • Server • Information and communication Technologies • Mobiles Phones • Computers systems
Agri-preneurial	May include, but not limited to: • Online marketing

	• Online Learning
Digital technology communication tools	May include, but not limited to: • Smart phone • Cell phone • Email • Telegram • SMS • What's APP
technique	May include, but not limited to: • Video chat • Virtual meeting • E-learning • Email • Video conference
Data collecting formats	May include, but not limited to: • Google sheet • Templates • Ex-cell • Google drive storage
Data collection methodologies	May include, but not limited to: • Interview • Questionnaire • Surveying • Focus group discussion (FGD) • Case study

Evidence guide	
Critical aspects of competence	Demonstrate knowledge and skills on: • Understand the basic digital technologies. • Use mobile/Smart phones and template to collect data and reporting the data • Understand the basic digital technology communication tools. • Identify the require tools and equipment to apply digital technologies • Apply digital technology • Understand the basic virtual meeting.
Required knowledge and attitude	Demonstrate knowledge on: • Understand the basic digital technology communication tools. • Understand the basic digital technologies. • New or upgraded technology performance • Environmental considerations • Appropriate performance evaluation.
Required skills	Demonstrate skills to: • Use Digital technology communication to collect data and report system • Use digital technologies applications • Use software applications (word processing, spread sheets, data base management

	• Apply skills for accessing and using spreadsheets and databases • Literacy skills for data analysis and interpretation • Determine and confirm digital technology communication tools**.**
Resources implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of assessment	Competence may be assessed through: • Interview/written test • Observation/demonstration with oral questioning
Context of assessment	Competence may be assessed in the work place or in a simulated work place setting.

Level IV

Occupational Standard: Animal Health Level IV	
Unit Title	**Apply Veterinary Drug and Chemicals**
Unit Code	**AGR ANH4 01 0322**
Unit Description	This unit covers the knowledge, skill and attitude required to use, control, prescribe, administer veterinary drug and manage associated risk managementprocedures according to organizational guidelines and procedures in veterinary service. It also covers the knowledge and skill required to store, dispense veterinary drug/chemical as well as apply activities of stock control and clinic security.
Element	**Performance Criteria**
1. Acquire basic knowledge in pharmacology	1.1. ***Technical terms*** in pharmacology and rational drug use are mentioned and described. 1.2. ***Characteristics of irrational drug use*** are mentioned. 1.3. ***Causes*** and ***implications*** associated with irrational drug use are mentioned and described. 1.4. General information on Nomenclature of drugs is gained. 1.5. ***Dosage forms*** of drug are mentioned and dose calculations of veterinary drug are explained 1.6. ***Routes of drug administration*** are mentioned indifferent species of animals for different types of drugs. 1.7. Drug prescription and ***pharmacological abbreviations*** in prescription are described. 1.8. The concept of pharmacokinetics and dynamics of veterinary drugs are explained.
2. Apply therapeutics drugs based on causative agent and body system	2.1. ***Hazards*** in handling and use of veterinary drugs are recognized and reported to designated personnel according to organizational policies and procedures. 2.2. OHS procedures are implemented in accordance with the Ethiopian Drug and Feed Administration and Control Authority. 2.3. Drugs acting on the different body systems are identified and listed. 2.4. Category, mechanism of action, dosage form, dose, route of administration, therapeutic indication, side effect, residual effect and contraindication of commonly available veterinary drugs and chemicals for various disease causing agents are mentioned and explained. 2.5. Prescription is prepared .based on the rational diagnosis of the disease and implemented 2.6. ***Wastes*** are disposed in line with environmental health policies and legislations.
3. Identify and administer biological fluids	3.1. Appropriate fluids for therapy of injured/ diseased animals are identified and prepared. 3.2. Dose and frequency of biological fluid are calculated.

	3.3. ***Fluid therapy*** is administered for controlling metabolic diseases and as supplement for needy animals as prescribed according to organizational treatment protocol. 3.4. Record is kept in and reported to the supervisor
4. Store and dispense veterinary drugs and chemicals	4.1. ***PPE clothing and equipment*** relevant in storing and dispensing drugs/chemical are used in accordance with organizational policies and procedures. 4.2. Medicines and chemicals are stored in accordance with the manufacturer's specification or datasheet. 4.3. Medicines are protected from environmental conditions that may damage or degrade them such as light, temperature and humidity according to the organizational guideline. 4.4. Organizational operating guidelines are used in the handling and dispensing of drugs.
5. apply stock control and clinic security	5.1. Regular inventory of veterinary supplies and medicines is taken according to clinic policies. 5.2. Medicines and supplies are ordered under direction of the duty veterinarian and qualified veterinary nurse. 5.3. Clinic stocks are checked as they are received against quantities ordered and priced. 5.4. Drugs are handled and stored securely in accordance with clinic and legislative requirements; legislative requirements relating to the handling, storage and security of drugs, including dangerous drugs should be considered 5.5. Clinic security measures are used in accordance with clinic procedures.

Variable	**Range**
Characteristics of irrational drug use	May include, but not limited to: • The use of veterinary drugs when no therapy is indicated, • Use of wrong veterinary drugs for specific conditions • The use of veterinary drugs with doubtful efficacy, • The use of veterinary drugs with uncertain safety status, • Use of correct veterinary drugs with incorrect route of administration, dosage, or duration, • The storage of veterinary drugs with other materials, • Absence of refrigerators for drugs that need cold chain, • The dispensing of prescription-only veterinary drugs at partial doses and without prescription, • Poor labelling of the dispensed items, • Lack of animal owner counselling, • Incomplete compiling and recording of prescriptions, and • Charging animal patients' owner unreasonably high prices
Causes	May include, but not limited to: • Faulty disease diagnosis

	• Abused use of drugs
Implications	May include, but not limited to: • Decreases drug's efficacy, • Promote the development of drug resistance and • Harm the animal itself as drugs are potential poisons. • A threat to drug resistance in human medication because residue from animal origin food
Dosage forms of drugs	May include, but not limited to: • Solid for oral use (Powder, tablet, capsule, bolus, pills, paste, granules) • Liquid preparations for oral use (mixtures, emulsion, syrup) • For parenteral administration (injections, ampules, vials, bottles, implants) • For topical –external use (liniments, lotions, ointments, dusting powder, suppositories • Other forms (inhalants, jells, infusions).
Routes of drug administration	May include, but not limited to: • Oral, intramuscular, subcutaneous, intravenous, ocular, rectal, vaginal, topical (spray, dipping, pour on)
Abbreviations in prescription writing	May include, but not limited to: • ad.Lib Freely as wanted • stat immediately • q.o.d every other day • q.s. a sufficient quantity • s.i.d. Once a day • b.i.d twice a day • Qid three times a day • sig directions to pt • stat immediately • susp. Suspension • disp. Dispense • amp ampule • sos if necessary • c. with • sol. Solution • cap capsule • disp. Dispens • tab. tablet • Div divide • Tbsp tablespoon (15ml) • ut.dict as directed • Gtt(s) drop(s) • Haust drench
Therapeutic drugs	May include, but not limited to: • Antibacterial • Antifungal • Anthelminthic

	• Antiprotozoal
vitamins	May include, but not limited to: • Multivitamin, Vit B-complex, vit A,
Mineral supplements	May include, but not limited to: • Calcium borogluconate, Dicalcium phosphate, Chalk, Disodiu phosphate, Dehydrated disodium, phosphate Magnesium sulpha Magnesium oxide, Iodized salt, Cobalt sulphate, preparation, Z sulphate, Zinc oxide, Manganese sulphate, Manganese oxide.
Chemicals	May include, but not limited to: • Deltametrin, malation, parathion, organophosphorous compounds (e. Diazinon), carbamates (e.g., carbaryl), pyrethroids (e.g., permethr flumethrin), formamidines, and avermectins.
Hazard	May include, but not limited to: • Hypersensitivity/allergenic • Spillage • Self-injection • Burning • Explosion • Inhalation
Wastes	May include, but not limited to: • Chemical waste (sterilants and disinfectants, photographic chemicals, disinfectant, detergent and steriliser, formaldehyde. • Pharmaceutical waste includes (vaccine bottles, empty injection bottles, syringes, whole medicines).
Fluid therapy	May include, but not limited to: • These fluids contain electrolyte and non-electrolyte solutes, which can move freely around the body's fluid compartments, eg, dextrose, ringer lactate, saline solution, calcium borogluconate.
PPE clothes and equipment	May include, but not limited to: • Protective masks, boots, hats/hard hat, overalls, gloves, protective eyewear, hearing protections, respirator or face mask, sun protection (sun hat, sun screen), and specialized gloves for conducting large animal examinations.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Implement rational use of drugs • Identify different forms of veterinary drugs • Mention types of chemotherapeutic drugs • Identify the different types of drugs used for the treatment of animal diseases • Identify drugs acting on the different body system. • Apply dose calculations of drugs • Identify proper injection sites • Identify basic materials, equipment and chemicals used for

	administration of drugs. • Store and dispense veterinary drugs in accordance with the manufacturer's specification • Prepare, read and properly interpret prescription papers. • Identify the different types of drugs used for the treatment of animal diseases. • Administer preventive and treatment drugs, fluids • Read and properly interpret prescription papers
Required Knowledge and Attitude	Demonstrate knowledge of: • Relevant legislations, regulations and directives • Safe work practices • Animal handling techniques • Basic principles of rational drug use • Types of chemotherapeutic agents (including their adverse effects and milk or meat withdrawal periods for the different types of veterinary drugs • Effect of drugs on the body cells and systems (pharmacodynamics) and their mechanism of action • The fate and mechanisms of actions of drugs • Routes of drug administration • Risks and emergencies associated with drug use • Communication and reporting
Required Skills	Demonstrate skills to: • Implement relevant legislations, regulations and directives • Follow OHS procedures and guidelines in drug use • Numeracy skills to complete basic arithmetic calculations and measure volumes • Apply dose calculations • Handle materials and equipment • Read and properly interpret prescription papers • Identify the different types of drugs used for the treatment of animal diseases • Administer drugs in to the animal body through various routes • Identify potential risks and respond to emergencies • Literacy skills to read and follow organizational guidelines and procedures including OHS; • Follow sequenced written instructions; and record information accurately and legibly • Oral communication skills required to fulfill the job role as specified by the organization including questioning, active listening, asking for clarification and seeking advice from supervisor • Problem-solving skills to use available resources and priorities daily tasks • Follow workplace procedures in veterinary drug use, observe safe practices during work operations and participate in arrangements for maintaining the health and safety of the workplace.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test

	• Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Perform Minor Surgical and Obstetrical Operations**
Unit Code	**AGR ANH4 02 0322**
Unit Description	This unit covers knowledge, skills and attitude required to carry out surgical and obstetrical operations, post-surgical patient care, application of suture patterns and knots and Administration of local and regional anesthesia. It also covers the knowledge and skills of proper application of euthanasia to humanely kill severely injured animals with incurable disease.

Element	Performance Criteria
1. Perform minor surgical operations	1.1. Safe work practices and OHS procedures for surgical operation**s**, and work place policies are implemented. 1.2. Pre-surgical considerations are identified and implemented to identify the problem and plan the type of minor surgery. 1.3. Preoperative preparations of surgical materials, work area, the surgeon, the ***animal*** and site of surgical correction are accomplished. 1.4. ***Minor Surgical operations*** are executed depending up on the identified problem/disorder and intension of the surgeon-owner on different farm animals following the organizational surgical operation protocol. 1.5. ***Surgical Assistance*** is provided during operation as required by the veterinary surgeon and according to the organizational work protocol.
2. Perform Obstetrical and gynecological surgical operation	2.1. Gross anatomy of female and male animal reproductive organ are illustrated and explained. 2.2. ***Obstetrical operative tools and equipment*** are identified and prepared depending upon the type of correction or surgical procedure. 2.3**.** ***Indications*** and different ***methods of castration*** in male animals are performed. 2.4. Different ***causes of dystocia*** are mentioned and ***approaches in dystocia management*** are implemented. 2.5. Management of uterine prolapse, vaginal prolapse and correction of foetal membrane retention are performed following OHS procedures. 2.6. Surgical removal of uterus and/or ovary are assisted to the surgeon veterinarian in cases of small animal surgery and in especial cases of indications in large animals. 2.7. Correction of phimosis and paraphimosis are implemented following standard surgical guidelines and OHS rules.

	2.8. Introduction urethral and uterine catheter is performed in some indications. 2.9. Teat canalization and drug infusion are carried out in the treatment of mastitis.
3. Provide post- surgical operative care and owner advice	3.1. Patient care and monitoring during surgical operation is performed based on the principles of surgical operation. 3.2. Different Suture patterns and knots are applied on opened surgical sites as required by surgical operation protocol**.** 3.3. **Post-operative surgical complication** are recognized and responded immediately. 3.4. Advice is given to patient owners based on the surgical procedures and the case requirement. 3.5. Fluid therapy, medication, dressings, bandages and oxygen are applied to animals as required according to the organizational treatment protocol. 3.6. Maintenance and cleaning of work area and materials after operation and ***Wastes*** are disposed according to recommended hygiene Standards and environmental policy.

Variable	**Range**
Preoperative preparation of the animal	May include, but not limited to: • Physical Restraining and administering anesthetic medication (analgesic) and premedication (tranquilizer in equine and dog), • Aseptic preparation of incision sites includes clipping, shaving, washing, scrubbing, disinfection, • Draping, intravenous fluids and electrolytes and analgesics.
Minor Surgical operation	May include, but not limited to: • Introduction of stomach and naso-gastric tube, • Correction of prolapsed rectum • Correction of simple bone fractures • Wound management • Bloat relief through application of trochar and canula, • Disbudding and dehorning • Tail amputation • Canalization of atresia ani • Tumor extraction • Rumenotomy (in cases where the problem is available and veterinary doctor is absent) • Hernia correction(herneoraphy) • Surgical procedures on integuments include:

	➢ Hoof trimming, ➢ Dehorning and Tail docking
Surgical assistance	May include, but not limited to: • Manage material and equipment • Passing surgical tools, equipment and drugs • Providing care for the surgeon • Monitoring and recording the surgical patient condition • Suture and knot application • Dressing
Obstetrical tools and equipment	May include, but not limited to provision of: • Clean and water proof gown and boots • Arm length gloves • Three nylon calving ropes, calving chains, calf puller • Sterile surgical kit for cesarean section • Fetotomy set • Obstetric lubricants, colloidal gel or powder form to be mixed with clean water before use, or it can be soap and water (but it can disperse natural lubricant) • Or liquid paraffin • Drugs (ca, phosphorus, oxytocin, antibiotics in injection and uterine pessary, local anesthetics , anti-inflammatory drugs , warm water …. • Burdizo, emasculator, mammary correction equipment and tools.
Indications for castration	May include, but not limited to provision of: • Enlarged prostate • To improve the meat quality • Prevention of breeding nuisance. • Scrotal hernia and perineal hernia • To render the males more manageable (docile) • Malignant disease or any irreparable injury of testes
	• Blood less castration o Using Elastic bands o Burdizzo castrator (Emasculatome) • Bilateral Orchiectomy – Surgical method • Pharmacological castration- by insertion of an estrogen implant.

Causes of dystocia	May include, but not limited to: • Maternal causes o failure of expulsive force (uterine inertia, uterine damage, torsion) o obstruction of birth canal • Fetal causes o Hormonal deficiency- ACTH/cortisol: initiation of birth o Feto pelvic Disproportion (fetal oversize, fetal monster) o Fetal maldisposition (ma presentation, malposition, mal posture)
Methods of dystocia management	May include, but not limited to: • Manipulative treatment o repelling to the abdominal cavity o correction of presentation, position and posture o safely traction • Surgical treatment- cesarean section • Fetotomy- per vaginum and safely
Post-surgical complication	May include, but not limited to: • Pain, Swelling, Hemorrhage, suture break … • Audible, visual or measured signs of pain includes: ➢ Arching back ➢ Behavioural changes ➢ Biting and kicking ➢ Elevated temperature ➢ Increased respiration ➢ Increased vocalization ➢ Withdrawal of affected limbs ➢ Straining ➢ Trembling and changes in normal physiology
Wastes	May include, but not limited to: • Tissue debris, blood and disposable surgical materials, packaging materials, dead animals.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Handle and restrain animals in a safe and ethical manner • Surgical site preparation • Application of local anesthesia • Incision and wound closure • Different ways of castration • Approaches in dystocia management and RFM • Correction of prolapses • Performing other minor surgical operations • Manage and follow post-surgical complications

	• Provide postoperative care for animals and postoperative advice for clients • Communicate effectively with the supervisor and clients
Required Knowledge and Attitude	• Aseptic preparation of incision sites • Minor surgical operations • Different Suture patterns and knots • Gross anatomy of animals • Common surgical instruments and equipment • Obstetrical and gynecological operations • Indications for castration • Post-operative complication
Required Skills	Demonstrate skills to: • Clean, disinfect and sterilize equipment and materials • Perform anesthesia monitoring techniques • Apply minor surgical procedures on integuments • Apply suturing and knotting techniques • Perform minor surgical operations • Castration and dystocia management • Correction of prolapses and RFM • Post-operative animal care and follow-up • Giving care advice for owner of surgically operated animals
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Carryout Veterinary Clinical Practices**
Unit code	**AGR ANH4 03 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to Conduct general and confirmatory diagnosis as well as provide more advanced treatment to clinical cases of veterinary cases. It also comprises knowledge and skill to conduct post treatment advice to the owner of animals.

Element	Performance Criteria
1. Conduct general and confirmatory diagnosis of veterinary cases	1.1. Reception duties are performed to owner and information history of the case as well as to admit the patient animal 1.2. Distant examination of the animal is performed to identify ***abnormal animal behaviour***, gait abnormality, feeding and watering of the patient animal. 1.3. Stepwise and detailed cranio-caudal ***close physical examination*** of the animal is conducted to identify ***signs of illness or injury.*** 1.4. Tentative decision on the cause of the problem is given based on the information in the clinical examination. 1.5. Sample specimen are collected and examined when confirmation is required. 1.6. Definitive decision on the cause of the disease is defined.
2.Provide treatment to clinical cases	2.1. Animals are safely handled and restrained without causing harm or injury to animal or handler. 2.2. Treatment equipment, materials and the right choice of the drug are selected and prepared based on the finding of detailed clinical as well as laboratory examination. 2.3. Drug dose, dosage form, route of administration, and frequency of the drug are determined after drug dose calculation and based on manufacturer instruction. 2.4. Authorised ***animal treatments*** are administered hygienically and consistently according to manufacturer's specifications or veterinary advice. 2.5. Treated animals are identified from non-treated animals to ensure compliance against the required Withholding Period (WHP). 2.6. ***Preventative medicine programs*** for external and internal parasites and microorganisms are implemented following the enterprise guidelines.

3. Provide post treatment advice to the owner and case follow up	3.1. Animal health and condition are monitored post-treatment and abnormalities are reported according to enterprise guidelines. 3.2. Follow up of diseased and/or treated animals is performed according to the enterprise requirements. 3.3. Environmental implications associated with the treatment of animals are identified, assessed and controlled according to enterprise requirements. 3.4. Equipment and worksite are cleaned and waste, including animal residues, is disposed of according to OHS and enterprise guidelines. 3.5. Health treatments are stored to manufacturers recommendations, industry and enterprise requirements. 3.6. Relevant information is documented according to industry and enterprise requirements.

Variable	**Range**
Abnormal animal behavior	May include, but not limited to: • Aggression, docility, vocalisation, and behaviour beyond an animal's normal range
Close physical examination	May include, but not limited to: • Inspection • palpation • Auscultation • Percussion
Signs of illness or injury	May include, but not limited to: • Behavioural changes, changes in physical appearance, ,gait, posture, body condition • Symptoms seen on animals like anorexia, fever, urinary inconsistency, constipation, depression, excessive salivation, restlessness, lameness, raised hair coat
Animal treatments	May include, but not limited to: • Animal treatments might be administered via tablets, liquids, pastes, topical applications, dressings, powders, rinses, sprays, worming, oral dosing, food and water preparations and injectables
Preventative medicine programs	May include, but not limited to: • Strategic de-worming, insect control, quarantine , chemo prophylactic treatments and vaccination

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Identify good health, illness and abnormal behavior in animals • Diagnose the animal and make tentative decision from differential diagnosis. • Give definitive diagnosis from laboratory result • Determine severity of infection Determine the type and scope of

	treatment • Administer authorized animal treatments and implement preventative medicine programs
Required Knowledge and Attitude	Demonstrate knowledge of: • Understand Normal animal parameters and behavior of healthy animal • Differential diagnosis for some kinds of animal disease • Broad knowledge of delivery methods of commonly used prophylactic and therapeutic treatments. • Understand type of test to conduct, right choice of treatment and dosage regime of drugs used in the treatment of disease.
Required Skills	Demonstrate skills to: • Identify hazards and implement safe work practices for animal health treatment • Collect appropriate samples for laboratory analysis • Select and apply chemicals appropriate to treat infections and infestations • Calculate and measure treatment dosage • Provide due care and humanely handle animals • Administer routine health treatments including injections, oral dosing and eye and ear topical creams • Collect and keep records
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Advanced Animal Health level IV	
Unit Title	**Apply General Laboratory Techniques and procedures**
Unit Code	**AGR ANH4 04 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to collect preserve and transport the right sample to the laboratory, process laboratory specimen for test and performing basic laboratory tests. The work functions within this unit require the demonstration of relevant theoretical knowledge and skill to conduct preparation and processing of lab specimen, to conduct basic staining tests, microscopic examination and analysis and reporting of results.

Element	Performance Criteria
1. Carry out Sample Collection, Preservation, and Shipment	1.1 Nature of specimen required to be collected is determined based on the tentative diagnostic finding in clinical examination or case report. 1.2 ***Supplies, materials*** and ***PPE*** needed for specimen collection, preservation and transport are identified and prepared in accordance with organizational policies and procedures. 1.3 Work area, animal and **sampling site** are identified and prepared to protect the integrity of the sample according to the operational guideline. 1.4 ***Specimens*** from animals are collected ethically and following its procedure and according to the animal welfare code and its recommended procedure. 1.5 The sample are ***labelled*** and recorded for clear identification according to the operational guideline. 1.6 The specimens are handled and ***preserved*** in manners that maintain its integrity and minimize the spread of pathogens to animals and human. 1.7 The samples Packaging and transportation are performed following the requirements of recipient laboratory and OIE recommendations. 1.8 Risks in sample collection and handling are recognized and reported to designated personnel.
2. Conduct general laboratory procedures	2.1. Personal hygiene and cleanliness standards are maintained as per organisational policies and procedures. 2.2. Appropriate safety precautions are followed for use of laboratory ***equipment*** and ***hazardous*** chemical materials in accordance with ***OHS*** and organisational policies 2.3. Working solutions, reagents and solvent of specified purity are selected and prepared based on the requirements of test to be carried out.

	2.4. The specimens are handled in a manner that minimise the spread of pathogens to humans according to the organizational regulation. 2.5. Samples are prepared for examination according to the requirements of the test to be carried out and the laboratory operational guideline. 2.6. ***Basic laboratory tests*** for identification of parasitic and microbial infections are conducted in accordance with enterprise procedures**.** 2.7. Observation/Examination and decision of the test result is performed. 2.8. Recording, calculation, interpretation and reporting of the test result is carried out.
3. Accomplish close up tasks in the laboratory	3.1 Disposable and non-disposable materials used for laboratory examination are segregated. 3.2 Disposable materials that are used in the test process are collected, treated and disposed following laboratory guidelines and precautions. 3.3 Reusable laboratory materials are collected, cleaned and stored following laboratory guidelines and precautions. 3.4 Fixed laboratory materials used in the examination process and laboratory room are cleaned following laboratory guidelines and precautions.

Variable	**Range**
Supplies and materials	May include, but not limited to: • Container, Cap, Refrigerant or ice, Mineral Oil, Formalin solution • Vial, Test tube or glass slide, Reseal able plastic bag, Vacutainer tube, cryovials
PPE	May include, not limited to: • Coverall/ gown • Glove of different types • Boot • Hat • Mask
Sample taking site on the animal	May include, but not limited to: • Jugular vein, Ear vein, Tail vein, Nasopharynx /oropharynx • Skin, Teat, Wound, abscess, Rumen, rectum, vagina,
Specimen	May include but not limited to: • Blood, urine, serum, milk, rumen content, faces, skin scrapings, tissues, pus, exudates, transudates, various secretions, excretions and parasites, organ etc
Sample labelling	May include, but not limited to: • Date of collection • Geographic area of coaction and veterinary service area

	• Animal information • Tentative diagnosis • Type of sample/specimen • Preservatives and transport media used • Suspected problem and test intended to be conducted • Duty veterinarian name and signature
Sample preservatives	May include, but not limited to: • Cold preservatives (refrigeration at -80 C^0, -20 C^0 -4 C^0, 0 C^0, 4 C^0). • Chemical (formalin 10 %, 40%, boric acid, HCI, acetic acid.)
Laboratory equipment	May include, but not limited to: • Microscope, slides, cover slips, reagents, chemicals, stains, laboratory benches, tables, Bunsen burners, loops, balances, centrifuges, incubators, photo-meters, haematometer, colony counters, racks, pipettes, weight basket, etc.
Hazards in the Work place	May include, but not limited to: • Equipment, vehicle and machinery operation and maintenance; • Exposure to noise, chemicals, gases, dust, splash or scalding, solar radiation and electricity; • Drift and volatility of chemicals; • Confined spaces; • Tripping hazards; • Damaged or worn out equipment; breakages; • Manual handling; • Items Blocking exits; • Items of equipment in areas used for access; • Poor surfaces; • Spillages; and • Animal bites, kicks or scratches.
OHS procedures	May include, but not limited to: • Laboratory technique has a range of associated risks from pathogens; equipment, chemicals and reagents and all duties should reflect awareness and precautions against such risks. • The handling of samples, equipment, chemicals and reagents requires a guideline to ensure safe work practices are maintained. • Safe work practices are used in handling and processing laboratory samples. • Procedures to reduce the exposure personnel to these hazards may include incident reporting, cleaning, removal of wastes and spillage, containment or elimination of risk, the use of PPE clothing and equipment and seeking advice from supervisors. • Use of safety cabinet (biohazard cabinet) • Stringency in following safety and precaution rules in the laboratory
Basic laboratory tests	May include, but not limited to: • Smear preparations (thin, thick, and wet smear)

	• Haematological examination (PCV, haemoglobin concentration). • Performing parasitological examinations (direct fecal examination, flotation, sedimentation, bermann) • Bacteriological examinations (Grams' stain, giemsa stain, methylene blue stain Acid fast test, California mastitis test)
Cleaning	May include, but not limited to: • Washing and cleaning of surfaces, washing and sterilization of glass and plastic wares, bottles, tubes, pipettes, slides, etc. • Disinfection of work areas and surfaces, cleaning of microscope, appropriate disposal of laboratory waste and broken or unwanted materials etc.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Identify the sample of choice for specified diseases diagnosed • Prepare for sampling and collect sample • Properly label and handle specimens or samples • Prepare laboratory materials and process the specimen according to the intended diagnostic test • Carrying out basic laboratory tests for diagnosis of domestic animal diseases • Maintain accurate records of the laboratory findings • Clean and maintain laboratory equipment and materials
Required Knowledge and Attitude	Demonstrate knowledge of: • Organisational guidelines and procedures, including OHS and hygiene standards • Relevant laboratory rules and legislations • Specimens collection and labelling methods • Standard methods of handling and storage samples • Transmission of dangerous pathogens to humans from samples or animals • Variations in different domestic animal classes (age, sex, breeds, species etc,) • Maintenance of laboratory hygiene and equipment handling • Concepts basic laboratory tests commonly used in the diagnosis of farm and pet animal health services • Standard operating procedures and record keeping and reporting
Required Skills	Demonstrate skills to: • Apply organisational guidelines and procedures • Identify laboratory equipment and materials used in domestic animal health services • Differentiate among various specimens needed for laboratory diagnosis • Apply appropriate sample collection, shipment and storage methods • Apply laboratory equipment and materials handling and preparation • Conduct basic laboratory tests for common diseases of animals • Wash, clean and keep sterility of equipment, materials and working

	places • Literacy skills to read and follow OHS and waste management procedures and other organisational guidelines and procedures • Select and apply the procedures to perform a range of defined tasks; follow laboratory instructions; and record accurately and legibly the findings • Oral communication skills to fulfil the job role as specified by the organisation including questioning techniques, active listening, asking for clarification and consulting with supervisor • Numeracy skills to complete arithmetic calculations and prepare laboratory reagents and solutions • Interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds • Problem-solving skills to use available resources and to prioritise daily tasks
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Carry-out Inspection of Animal Origin Food and Veterinary Public Health Activities**
Unit Code	**AGR ANH4 05 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to monitor the hygiene of meat, egg, milk, other milk products and by-products and honeyfollowing organizational OHS policies and procedures. It also covers sampling and conducting examination of animal origin food, meat inspection, understanding of public health issues associated with meat consumption and carrying-out community awareness on veterinary public health issues.

Element	**Performance Criteria**
2. Develop knowledge of public health issues associated with food of animal origin	1.1. Public health defined and scope explained 1.2. ***Zoonotic diseases*** definition, source and prevention are described 1.3. Nutritional importance, quality and hygiene maintenance of food of animal origin are described. 1.4. ***Foods of animal origin are*** given considerations as a source of zoonotic disease. 1.5. Residual effect of drugs, vaccine and chemical from food of animal origin are explained

2. Acquire knowledge on abattoir and abattoir hygiene	2.1. Considerations for site in abattoir construction are mentioned and described 2.2. Standard abattoir service facilities to perform full activities of slaughtering process and quality examination are mentioned**.** 2.3. Abattoir sanitation approaches and standard principles are considered. 2.4. Standards to maintain abattoir hygiene are described and public health problems associated with unhygienic abattoir handling are explained. 2.5. The concept of ***HACCP*** and its application are described based on organizational guidelines.
3. conduct ante mortem examination and supervise slaughtering process	3.1. ***OHS*** and ***hazards*** associated with the procedure are identified and appropriate action is taken to protect self and others. 3.2. The lairage and slaughter room are kept in clean and hygienic condition according to the enterprises requirements. 3.3. All relevant ***preliminary information*** about the ***animal*** to be examined is obtained and collated. 3.4. External assessment of the animal is carried out and outward signs of abnormalities or injury are noted. 3.5. ***Abnormal characteristics*** that may indicate the presence of notify able and potentially hazardous conditions or diseases are identified and appropriate action is taken prior to slaughter. 3.6. ***Judgment for slaughter*** is passed on the animal based on ante mortem examination guidelines and enterprise procedure. 3.7. The ***slaughtering process*** is carried out starting from ***stunning*** to carcass splitting following standard hygienic procedure under veterinarian supervision and inspection. 3.8. Offal and carcass are separated to prevent cross contamination.
4. Conduct post-mortem examination and follow up maintenance of cold chain	*4.1.* ***Physical examination of the carcass*** and offal are carried out for the detection of ***Pathological lesions*** following ***guidelines and principles of PME*** by veterinarians. *4.2.* ***Judgment*** after PME is passed on carcass based on examination results and in accordance with standard guidelines and procedures. *4.3.* Carcass and other offal are maintained in to the cooling and chilling are for ***preservation*** or directly transported for distribution. *4.4.* Whole or part of carcass with suspicious signs are labelled and taken to separate room *4.5.* All information about the animal examined and the records of observations made during the post-mortem are collated and forwarded to the relevant persons for analysis and diagnosis 3.10. Post mortem area and equipment used are hygienically cleaned, disinfected and stored for re-use. 3.11. ***Personal biosecurity clean-up*** is completed in accordance with the institution's policies and procedures hygienically cleaned,

	disinfected and stored for re-use. 3.12. Personal biosecurity clean-up is completed in accordance with the institution's policies and procedures.
4. Conduct Sampling and quality assessment for food of animal origin	4.1. Sampling materials and equipment are identified, maintained and used according to the enterprise guide lines. 4.2. ***PPE clothing*** and equipment are identified, maintained and used according to the enterprise requirements. 4.3. Samples of milk, egg, honey, organs, other tissues and fluid samples are taken if necessary, where appropriate, and prepared in accordance with appropriate standard methods, institutional and laboratory requirements. 4.4. Information is recorded and reported according the enterprise guidelines. 4.5. Materials, equipment and tools used for quality assessment of meat, milk, eggs and honey are identified, maintained and used according to the enterprise guide lines. 4.6. Basic physical, chemical and microbial test of meat and milk is performed according to the enterprise guide lines under supervision 4.7. Egg collection, handling**,** and gradin***g*** are performed based on the enterprise procedures and regulation under supervision. 4.8. Honey collection, handling**,** and grading are performed based on the enterprise procedures and regulation under supervision. 4.9. Results are recorded and interpreted in accordance with enterprise procedures.
5. Perform community awareness on veterinary public health issues	5.1. Plans are structured and finalized and accepted in accordance with veterinary public health guidelines and procedures. 5.2. ***Veterinary public health awareness activities*** are conducted using effective message development and delivery techniques. 5.3. Relevant ***equipment*** is operated correctly and materials are used effectively to assist the community in understanding the activities. 5.4. ***Current public health issues*** are addressed according to international, national or enterprise policy procedures and guidelines.

Variable	Range
Zoonotic disease	May include, but not limited to: • Anthraxes • Tuberculosis • Salmonellosis (food-meat poisoning) • Enterohemorrhagic *E coli*(EHEC • Enteroinvasive *E coli*(EIEC) • Enteropathogenic *E coli*(EPEC) • Enterotoxigenic *E coli*(ETEC) • Shigellosis (bacillary dysentery) • Brucellosis • Taeniasis • hydatidosis • *Toxoplasmosis* • Cryptosporidiosis • Hepatitis A, B, C, D,E • Rota viruses • Aflatoxicosis (Aspergilosis) • Typhoid, typhus, listeriosis botulism, ascariasis, rabies, miasis
Food of animal origin	May include, but not limited to: • Egg, milk, meat, fish
service facilities	May include, but not limited to: • Administrative room, Lairage, stunning box, slaughtering room, deboning and inspection room, offal room (green and red offal), laboratory room, chilling and cold room, emergency slaughter room.
HCCP	May include, but not limited to: • Hazard critical control point
preliminary information	May include, but not limited to: • Physiological status of female animal • Weight • Body condition • Previous health problems • Sign of ill health if any • Health of other animals in the same herd/institution
Animal	May include, but not limited to: • Beef, sheep, goat, pig, poultry, camel
Abnormal characteristics	May include, but not limited to: • Abnormal characteristics might be anything that cannot be diagnosed or explained from previous experience

	• Where abnormal characteristics appear to be present, they should be referred immediately to a veterinary laboratory
Judgment for slaughter	May include, but not limited to: • Approved for slaughter • Condemned for slaughter • Slaughter authorized under special precautions • Authorization for slaughter delayed (postponed) • Emergency slaughter ordered
slaughtering process	May include, but not limited to: • Stunning • Bleeding • Skinning/dressing • Evisceration • Splitting • Loading/unloading
Stunning	May include, but not limited to: • Captive bolt • Striking instrument • Electricity • Carbon dioxide
Physical examination of the carcass	May include, but not limited to: • Inspection • Palpation • Incision • inspection
Pathological lesions	May include, but not limited to: • Poor condition /emaciation • Imperfect bleeding • Bruising • Adhesion • Cirrhosis (due to fasciolosis) • Fevered (pyrexia) flesh • Oedema or dropsy • Pigmentation • Jaundice/icterus • pneumonia • Calcification • Gangrene • Haemorrhage • cysts • Abnormal odour Abscesses (pyemia

Guidelines and principles of PMI	May include, but not limited to: • Evisceration is effected without delay • Incision are made without obliteration • Offal, carcases, and heart are labelled and bear the same numbe3r • No lesion is removed before judgement is passed • No lesions are modified or obliterated to disguise meat inspection • No removal of organs or carcase before final judgement is passed • No removal of identification marks
Judgements after PME	Include: • Passed for consumption • Total condemnation • Partial condemnation /partial approved • Conditionally approved human consumption • Detained • Inferior meat • Approved for special distribution
Preservation methods	May include, but not limited to: • Physical methods of meat preservation • Preservation by killing the microorganisms • Canning
Safe work and OHS practices	May include, but not limited to: • Use of PPE clothing and equipment relevant to the task such as safety goggles, glasses, protective masks and animal handling gauntlets. • Protocols for safe work practices include: ➢ risk identification and risk minimization; ➢ the handling, use, storage, transport and disposal of chemicals; and ➢ The handling and disposal of biological wastes. ➢ handling of chemicals and medicines in the organization requires extra care
Hazards	May include, but not limited to: • animal bite, sting, kick, horning, scratches and wounds associated with animal handling, handling of animal origin products, storage condition, zoonotic diseases, sharps, odors, chemicals, biological waste, electricity, the public, inappropriate clothing, instruments and equipment
PPE clothing and equipment	May include, but not limited to: • Gown, boots, overall, gloves, protective eyewear, respirator or face mask, bull holder, chains and shackles
Wastes	May include, but not limited to: • Biological waste (from animals, tissue or bedding),

	• Dead animals, • Animal products unfit for consumption (milk, meat and some internal organs, egg, butter, cheese), Packaging materials
Post mortem inspection procedures	May include, but not limited to: • Visualization • Palpation • Incision and Judgement
Personal biosecurity clean-up	May include, but not limited to: • Clothing changed and placed in appropriate bin for laundering • Disposable gloves are disinfected before being disposed • Footwear disinfected if appropriate • Hands thoroughly washed and dried
Veterinary public health awareness activities	May include, but not limited to: • Creation of awareness on major zoonotic diseases, source of infection, mode of transmission, prevention and control means to the public • Awareness on hygienic management of meat
Equipment	May include, but not limited to: • Electronic medias (radio, internet and television), print medias (brochures, pamphlets, newsletters, bill boards and leaflets)
Current public health issues	May include, but not limited to: • Outbreak, vaccination, natural disaster, pandemics

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Observe safe practices during work operations • Zoonotic diseases and veterinary public health issues • Follow animal origin food hygiene inspection procedures for risk identification and control • Abattoir sanitation and maintenance of hygienic slaughtering process • Supervise slaughtering procedure • Maintain safe animal origin food hygiene inspection sites. • Collect appropriate sample from foods of animal origin for inspection. • Apply basic quality and hygiene assessment of meat, milk, egg and honey. • Conduct Ante mortem and post-mortem examination of animals • Apply Basic principles of meat inspection • Make decisions after AMI of slaughter animal and PMI of the carcass/ offal • Provide awareness on zoonotic disease prevention to the community.
Required Knowledge and Attitude	Demonstrate knowledge of: • Zoototic diseases and public health related information's • Abattoir sanitation and maintaining hygienic slaughter process • Sampling of animal origin food • Technical information on veterinary public health and other relevant

	issues to the presentation or subject matter • Basic principles of meat inspection • Decisions on animal after AMI and carcass upon PMI • Preservation methods of meat • Principles of teaching and awareness of adults • Data collection methods to support the development of materials • Interpersonal skills to work with people from a range of cultural, social and religious backgrounds
Require Skills	Demonstration skills to: • Identify hazards and implement safe work practices • Use PPE clothing and equipment and follow OHS procedures • Follow animal origin food hygiene inspection procedures for risk identification and control • Maintain safe animal origin food hygiene inspection sites. • Implement laws, regulations and directives • Assist in basic quality and hygiene assessment of meat, milk, egg and honey • Plan, deliver and evaluate community awareness activities • Diagnose animal diseases • Identify and select animals for slaughter • Comply with animal welfare requirements • Apply Basic principles of meat inspection • Inspect meat • Use equipment in a slaughterhouse • Disposal of offal, clean and sterilize facilities and equipment • Apply basic quality and hygiene assessment of meat, milk, egg and honey. • Provide awareness on zoonotic disease prevention to the community.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Conduct Prevention and Control of Animal Diseases**
Unit Code	**AGR ANH4 06 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to maintain safe animals' health through prevention, control and Strategic treatment of veterinary disease. It also includes Disease outbreak investigation and report writing and implementing safe and hygienic work practices.
Element	**Performance Criteria**
1. Develop basic understanding on disease prevention and control	1.1. The concepts of control ,prevention and eradication of animal disease are described 1.2. ***General methods of prevention and control*** for common animal disease are identified 1.3. ***Determinants*** of disease occurrence and development are explained. 1.4. ***Temporal Patterns*** of disease occurrence in a population are understood, identified and characterized.
2. Apply bio security protocols to people, animals and equipment	2.1. Principles and Component's ***bio-security*** has been Understood and described. 2.2. Possible sources of pathogen contamination entering work area are identified. 2.3. Potential bio security threats on the enterprise are identified. 2.4. Farm compound footpaths and areas around sheds are kept clear of debris according to workplace policy.
3. Identify and implement Prophylaxis's measures	3.1. Preventive Prophylactic measures are identified and applied to common bacterial viral and protozoan disease based on veterinarians recommendation 3.2. Strategic deworming and ***integrated treatment*** is implemented to minimize the risk of parasite on animal production and drug resistance.
4. Design and implement vaccination program	4.1. Biology of immune system and ***types of immunity*** are introduced. 4.2. Importance of vaccination and common ***types of vaccine*** are explained. 4.3. ***General principles*** and precautions of vaccination in animal are explained and understood. 4.4. ***Vaccination strategy*** is designed considering virulence of the causative agent, spreading velocity of the diseases and geographic distribution host animal. 4.5. Common and available ***bacterial vaccines*** used for ***different species*** of animals are identified and used following manufacturers instruction. 4.6. Common and available ***viral vaccines*** used for different species of animals are identified and used following manufacturers instruction.
5. Disease outbreak investigation and report writing	5.1. Definition and importance of disease outbreaks investigation is described. 5.2. Factors for occurrence of disease outbreaks described and identified. 5.3. Epidemiological approach to investigation of outbreaks are applied

	5.4. Report writing is implemented based on the principles and guide lines of OIE
6. Participate the community in animal disease prevention	6.1. Prevention and treatment strategies are identified to resolve health issues, including rotational grazing, exclusion from infected areas, involving in the ***national development of immunity***, genetic selection and treatment with drugs. 6.2. Prevention of mixing heard of different owners at watering, grazing points and isolation of those newly brought/returned from market is carried out 6.3. Quick isolation of sick animal and appropriate measure is taken

Variable	**Range**
General methods of prevention and control	May include, but not limited to: • Test and slaughter • Quarantine • Improvement husbandry and feeding • Vector control • Genetic improvement
Determinants of disease	May include: • Agent • Host • Environment
Pattern of occurrence	Include • Endemic • Epidemic • Pandemic and • Sporadic occurrence
Component's bio-security	May include, but not limited to: • Isolation • Movement control • Disinfection and sanitation
Integrated treatments	May include, but not limited to: • Chemoprophylaxis, Mixed, alternate, sequential and rotational grazing
types of immunity	May include • Nonspecific (innate, natural or native) immunity. • Specific (acquired) immunity
	May include, but not limited to • Sick animals shouldn't be vaccinated • Animals should not be vaccinated within three to four weeks after taking drugs. • Don't administer antibiotics when a vaccine containing live bacteria is administered. • Stressing of animals to be vaccinated should be avoided. • Repeated use of needles and syringes within herd/flock is undesirable.

	• Injectable vaccines should be stored and reconstituted as recommended by the manufacturer. • Liquid preparations should always be adequately shaken before use. • Accidental self-injection with oil-based vaccines requires medical attention has to be taken.
Different Species	May include, but not limited to: • Ruminants • Equines • Poultry • Dogs
Vaccine types	May include but not limited to: • Live Vaccine • Killed Vaccine • Autogenous Vaccine • Toxoid Vaccine • Sero vaccine • Recombinant
vaccination strategy	May include but not limited to: • Ring vaccination, • Barrier vaccination • Suppressive or dampening-down vaccination) • Mass vaccination
Common bacterial vaccines	May include but not limited to: • Anthrax • Blackleg • Pasteurela • CCPP • CBPP
Common viral vaccines	May include but not limited to: • FMD • Pox vaccine • Rabies • LSD • PPR • AHS • NCD • IBD
National development of immunity	May include, but not limited to: • Mass vaccination, ring vaccination, blanket vaccination

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Identify and implement preventive measures • Implement prophylactic treatments

	• Participate in animal diseases prevention and control programs, • Identify and use various vaccine types • Identify and settle biosecurity issues • Investigate disease outbreaks • preparing disease outbreaks reports
Required Knowledge and Attitude	Demonstrate Knowledge of: • Basic knowledge on disease prevention and control methods. • Basic knowledge on biological handling and use of prophylactic drugs and vaccines • Bio-security protocols and Awareness creation methods • disease outbreaks Investigating procedures report writing • approach to participate the community in disease prevention
Required Skills	Demonstrate skills to: • Prevent animal diseases • Select, maintain and apply different prophylactic and therapeutic drugs and biological • Participate the community in animal disease prevention • Administer authorized animal treatments and vaccination programs • Numeracy skills to complete arithmetic calculations and measure doses • Disease outbreaks Investigating skills by using available resources and prioritize daily tasks
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Perform Animal Quarantine Operations**
Unit Code	**AGR ANH4 07 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to carry out daily quarantine techniques in field, feedlot, pre- quarantine and quarantine station. It also requires the ability to inspect andcollect samplesfromequarantined animals there by provide health certificate. Quarantine operations also require knowledge of quarantine wastes disposal.
Element	**Performance Criteria**
1. Understanding and Carry out animal quarantine activities.	1.1. Basic **terminology** on quarantine activities Classification of importing quarantine stations clearly defined. 1.2. Availability, security and functionality of necessary **materials, tools, equipment,** animals and other items for the quarantine stations are regularly checked and maintained according to the quarantine regulation. 1.3. Consideration taken into account for Site selection and quarantine construction are clearly described. 1.4. Suspected animals and animals found sick and their products are isolated, maintained, managed and treated through regular follow up and observation of animals according to the quarantine station treatment protocol or guideline. 1.5. Appropriate nutrition is provided for every group of quarantined animals based on the nutrition plan and any change in feed and feeding habit of animals is regularly followed, checked, recorded and reported according to the quarantine regulation. 1.6. Cleaning and disinfection of the quarantine environment, animal houses, feed and watering troughs, and animals are regularly conducted based on the organization plan and regulation. 1.7. Specific activities used in preventing, controlling and eradicating disease of disease in the quarantine station is clearly performed
2. Carry out samples collection and decisions on a quarantined animal and their products	2.1. Personal hygiene and cleanliness standards are maintained in accordance with OHS and organizational guidelines and procedures. 2.2. Safety training is undertaken or provided as necessary PPE, sampling and sample transporting materials, medias and equipment are secured according to the quarantine station operational guideline 2.3. Proper and representative ***Samples*** for different quarantined animal species are identified, collected, labeled and stored safely and are submitted to laboratories according to organizational procedures and laboratory regulations of the importing country. 2.4. **Appropriate decisions** are passed based on the findings that we get from the operational **quarantine activity** according to quarantine regulation

3. Wastes disposal and report quarantine data	3.1. Adequate area for the disposal of quarantine waste is prepared according to the organizational guideline. 3.2. Quarantine ***wastes*** are isolated properly, and disposed off safely according to safety procedures, organizational guidelines and environmental legislations. 3.3. Daily observations are recorded on animal history sheet 3.4. Original animal health certificate is given to the owner or exporter up on completion of quarantine period. 3.5. History sheets and associated documentation of animals released from quarantine is archived and is set accessible for auditing and information purposes.

Variable	**Range**
Terminology	May include, but not limited to: • Quarantine • Trans boundary animal disease • List A disease • List B disease
Materials, tools and equipment	May include, but not limited to: • Arm length gloves, surgical gloves, vacutainers, needle with holders, gauze, cotton, , rope, different sedatives and tranquilisers, gowns, apron, rubber boots of appropriate size • Thermometers, oesophageal tube, nose ring, chains, stethoscope, mouth gag, drenching gun, balling gun, sprayer, crush, trocar and canulla, racks, mouth gag, neck collar, kennels, veterinary first aid kit, goggles, forceps, scissors, scalpel, dehorning saw, hemostats, stomach tube, icebox, refrigerator, water bath, stove, sterilizers • Disinfectants, antiseptics, formalin, scalpel blade, dehorning wire, dehorning saw blade, surgical needles, cat gut and silk, local anesthesia, broad spectrum antibiotics, vaccines, saline water, distilled water, acaricides, anthelmentics,
Samples	May include, but not limited to: • Blood, feces, milk, urine, skin scrapings, tissues, biopsy, pus • Animal product sample (meat, milk cheese, butter, cream)
Decisions passed	May include • Approved to cross the boundary • Not approved to cross the boundary • Detained for further testing
Quarantine activities	May include, but not limited to: • Maintain Bio security • Deworming • Vaccination • Blood sample collection, transport to laboratories of the competent authority • Receive laboratory results and forward decision • Recording vital signs, body temperature, breathing, heart beat and

	pulse rates. • Observing physical conditions of animal products include(change in flavor and color, physical damage to the container) • Follow up of animals and their products used for human food in quarantine • Recording the incoming and certification of outgoing animals and their products used for food for human being in quarantine.
Wastes	May include • Biological waste (from animals, tissue or bedding), syringes, needles, sharps & expired medicines & their containers.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Organize workplace information • Apply relevant OHS procedures • Establish favorable work environment • Describe and carry out daily quarantine activities • Identify and describe physical conditions and vital signs of animals • Collect samples from quarantined animals • Dispose of quarantine waste
Required Knowledge and Attitude	Demonstrate knowledge of: • Relevant OHS guidelines and Safe work practices • Animal temperaments and behaviors in order to develop an understanding of the associated hazards and risks • Animal quarantine techniques • Sample collection, storage and transportation procedures • Physical conditions and vital signs of animals
Required Skills	Demonstrate skills to: • Organize workplace information • Carry out daily quarantine techniques • Collect samples from quarantined animals • Dispose of quarantine wastes
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning

Occupational Standard: Animal Health Level IV	
Unit Title	**Carry Out Poultry Health Practice**
Unit Code	**AGR ANH4 08 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to develop detail understanding of poultry production, health management and carry out the identification, classification and handling of major infectious diseases and non-infectious diseases of poultry which are the serious constraints in poultry industry. The unit also requires the knowledge and skills to Implement poultry health management and bio securitymeasures to prevent and control poultry diseases.

Element	Performance Criteria
1. Develop understanding of poultry production and health	1.1 Different poultry ***production systems*** are identified and described based on their management types. 1.2 ***Poultry Housing plans*** are determined according to the standard specification of the industry. 1.3 Feeding and watering materials and other tools to be used in poultry houses are described and specified based on the breed, age of the birds and according to the industries specification. 1.4 ***Breeds*** are categorized according to the production objectives of the industry. 1.5 Husbandry related issues are described according to the protocol and guidelines of the industry. 1.6 Nutrition plan is scheduled based on the nutrient requirement and age of birds.
2. Identify and handle infectious disease of poultry	2.1 PPE are accessed and used based on OHS guidelines. 2.2 Appropriate tools and equipment**,** feed and water containers are selected and checked for cleanliness and made ready for use. 2.3 ***Viral diseases of poultry*** are described based on their occurrence, clinical sign and symptoms, mode of transmission, laboratory and post mortem findings; and are handled according to the organizational guideline. 2.4 ***Bacterial diseases of poultry diseases*** are identified and handled according to the organizational guideline. 2.5 ***Parasitic diseases of poultry*** are described and identified based on their nature, clinical sign and symptoms, mode of transmission, laboratory and post mortem findings; and are handled according to the organizational guideline. 2.6 ***Fungal poultry diseases*** are identified and handled according

	to the organizational guideline. 2.7 Diagnosis of diseases and differentiation from other diseases with similar character are undertaken according to the enterprise guide lines. 2.8 Causative agents are identified by clinical signs and laboratory diagnosis by collecting ***appropriate specimen*** from clinically sick and dead animals for specific suspected diseases according the laboratory requirements. 2.9 Treatments are prescribed, and ***prevention and control methods*** are identified and implemented as required. 2.10 ***Public and economic importance*** of the diseases is identified, advice is given and appropriate prevention and control programs are implemented as required.
3. Identify and handle non infectious causes of poultry diseases	3.1. ***Poor management*** practices which result in production loss are assessed and identified 3.2. ***Nutritional deficiency*** due to improper ration composition are identified and managed. 3.3. ***Poisoning and sources of toxicity*** are identified and chance of their access through feed, water, inhaled air is reduced. 3.4. Stress due to over stocking, production, vaccination, treatment and climate change, is identified and managed according to the industry's guidelines. 3.5. Economic importance of the diseases is identified and advice is given and appropriate prevention and control programs are implemented as required under supervision.
4. Implement poultry health management and bio security	4.1. Prevention and control measures for each of the diseases are identified and implemented according to the enterprise guideline. 4.2. Strict ***bio-security*** measures are implemented according to the organizational requirement. 4.3. Good sanitation and litter management is carried out according to the enterprise guideline. 4.4. Appropriate spacing and free air circulation is ensured according to the industry's standards. 4.5. Quick identification and culling /separation of sick birds is carried outaccording to the enterprise guideline. 4.6. Vaccination schedule is planned and the right ***vaccine type*** is administered based on the age and breeding type and implemented based on the breeding type and age of birds.

Variable	**Range**
Production system	May include, but not limited to: • Commercial

	• Village/ Backyard
poultry house plans	May include, but not limited to: • Brooder/ chick house • Grower poultry house • Layer poultry house • Broiler poultry house • Breeder poultry house • Environmentally controlled poultry house
Breeds	May include, but not limited to: • Layers • Broilers • Dual purpose
Viral diseases of poultry:	May include, but not limited to: • Infectious bronchitis, avian corona virus, infectious laryngiotracheitis, avian influenza, fowl pox, infectious bursal disease, maek's disease, Newcastle disease
Bacterial diseases of poultry	May include, but not limited to: • Infectious coryz, pullorum disease, salmonellosis (fowl typhoid), pullorum disease, fowl cholera, campylobacteriosis
Parasitic diseases of poultry:	May include, but not limited to: • Coccidiosis , worms
Fungal poultry diseases:	May include, but not limited to: • Aspergillosis
Appropriate specimen	May include, but not limited to: • Specific type of samples to be collected for each infectious diseases of poultry; which may include whole blood, serum, cloacalswab
Preventive and control methods	May include, but not limited to: • Prophylactic (vaccines or other preventive drugs) or therapeutic treatment, culling of the sick birds, test and slaughter, isolation, quarantine, movement control, burying or incineration. • Improve animal feeding, housing and handling managements • Strict bio security measures
Public and economic importance	May include, but not limited to: • Zoonotic importance • High mortality • Loss of production performance • International trade ban
Poor management	May include, but not limited to: • Inadequate spacing, improper feeding plan, insufficient ventilation, sanitary problems, improper vaccination schedule,
Nutritional deficiencies	• Mineral deficiency, protein deficiency, vitamin deficiency (vit A, D, E, K, B1 & B2), energy deficiency

Poisoning and sources of toxicity	May include, but not limited to: • Aflotoxins, Salts, Ammonia, Lead, Plants, Botulism, Pesticides
Hazards in the workplace	May include, but not limited to: • Zoonoses • Chemical spillage • Biological hazardous waste and sharps disposal • Handling of chemicals and medicines • Gas leakage • Inhalation of aerosol particles • Intraocular contamination • Manual handling, including carrying, lifting and shifting • Needle pricks and cuts from other sharps • Release of infective agents (animal and human) • Slippery or uneven work surfaces.
Bio security	May include, but not limited to: • Clean dry litter, foot bath, tyre bath, insect proof, movement restrictions, clean feeders &waterers, pest control
Vaccine type	May include, but not limited to: • In broiles: ➢ Newcastle disease, infectious bursal disease, marek's disease, infectious ronchitis • In broilers and layers: ➢ Marek's disease, Fowl Pox, Fowl Cholera, Infectious bursal Disease, Infectious bronchitis • In commercial layers: ➢ Marek's disease, Infectious bursal Disease, Infectious bronchitis, infectious coryza

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Implement work area policies, legislations, regulations and directives • Recognize the signs and symptoms, and mode of transmission of major poultry diseases (infectious and non-infectious) • Identify and collect appropriate specimens for specific diseases • Identify the treatment protocols for the diseases and administer treatments • Identify the prevention and control methods for the diseases • Maintain health and well-being of animals • Communicate effectively with clients and staff and provide advice to the clients • Maintain work environment and personal hygiene
Required Knowledge and Attitude	Demonstrate knowledge of: • Organisational guidelines and procedures, including OHS and hygiene standards

	• Relevant legislation • Anatomical and physiology of poultry • Housing, exercise, social and activity needs of these animals • Principles basic clinical and laboratory diagnosis • Disease and disease processes • Working knowledge of various diseases • Signs and symptoms of diseases • Husbandry and service systems and their relation with disease • The local climatic and agro ecological conditions • Concepts of prevention and control of diseases • Protocols for hazard identification and risk minimisation
Required Skills	Demonstrate skills to: • Apply organisational guidelines and procedures • Identify obvious signs & symptoms of animal diseases • Appropriate handling and restrain • Performing clinical and laboratory diagnosis • Perform simple laboratory tests • Apply various prophylactic and therapeutic treatment patterns • Follow OHS and waste management procedures and other organisational guidelines and procedures; • Select and apply the procedures to perform a range of defined tasks; follow treatment instructions; and record accurately and legibly the information collected • Oral communication skills to fulfil the job role as specified by the organisation including questioning techniques, active listening, asking for clarification and consulting with supervisor • Complete arithmetic calculations and determine anti animal drug doses • Interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds • Problem-solving skills to use available resources & to prioritise daily tasks.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Carryout Animal Husbandry and Farm Management**
Unit Code	**AGR ANH4 09 0322**
Unit Description	This unit of competence covers the knowledge, skills and attitude required to carry out animal husbandry practice and farm management in order to enhance production and productivity of livestock industry. The unit of competence focus on farm site selection, housing, breeding, feeding, health, production management and marketing for dairy farm, Beef farm, small ruminant, pig, fishery and honey bee. It also covers good management practices, record and reporting after completion work.

Element	Performance Criteria
1. Apply dairy farm Husbandry practice and management	1.1. Dairy farm business is identified based on resource availability and cost benefit analysis 1.2. Dairy farm site selection and the ***type house*** are determined based ***relevant factors***. 1.3. Forage production and management for the dairy animal are well identified and applied based on ***forage selection criteria's*** 1.4. Appropriate feed and feeding practice are identified and applied based on ***required feed type and animal status*** 1.5. Selection of the proper Dairy cattle breed with reproduction health is well understood and performed based on ***Breed selection criteria's.*** 1.6. The proper ***young stock management*** for dairy cattle are identified and implemented as per the production objective. 1.7. Assessment on the ***production performance*** of dairy are carried out by using signs of fertility problem and information gathered from record book of the dairy. 1.8. ***Fertility problems*** for dairy cattle are diagnosed based on veterinary clinical examination methods 1.9. ***Health abnormalities*** on dairy cattle due to environmental, ***metabolic disorders***, nutritional and animal handling stresses are identified and minimized according to the organizational guide lines. 1.10. ***Screening and testing*** of the herd for ***major Dairy health risks*** and suspected diseases are conducted as required according to the enterprise guideline. 1.11. ***Appropriate measures*** are taken to prevent the occurrence and transmission of reproductive diseases among dairy cows, and zoonosis diseases according to the national diseases' prevention and control guideline and enterprise guide lines.

	1.12. ***Prevention and control activities*** for reproductive and fertility problems of dairy cows are undertaken. 1.13. Health abnormalities of non-productive animals are identified and ***recommendations/advise*** is given for nutritionist, animal care takers. 1.14. The proper ***Hygienic milk production*** and ***marketing management*** are well identified, analyzed and applied to improve the benefit from the dairy sector.
2. Apply beef Farm/feedlot Husbandry practice and management	2.1 Livestock farming systems based on ***production system*** and ***source of feeds*** and grazing system are practiced. 2.2 Beef farm/ feedlot business is identified based on resource availability and cost benefit analysis 2.3 Beef/ feedlot farm site selection and the ***type house*** are determined based ***relevant factors***. 2.4 Selection of the proper ***Beef cattle breed*** are well performed based on animal body conformation. 2.5 Economic basis to supplementary ***feeding system*** is determined according to enterprise requirements. 2.6 ***Feed and feed supplements*** are confirmed and prepared in line with ***feeding plans.*** 2.7 ***Existing and potential hazards*** in relation to feeding and watering are identified and reported to the supervisor. 2.8 Beef animal feeding are performed based on the required body gain. 2.9 Beef animal disease is identified and preventive measures are applied as organization rule and regulation. 2.10 Body weight gaining, transportation, transportation related risk and marketing are identified.
3. perform small ruminate Farm/pig farm Husbandry practice and management	3.1. Livestock farming systems based on ***production system*** and ***source of feeds*** and grazing system are practiced. 3.2. The farm business is identified based on resource availability and cost benefit analysis 3.3. The farm site selection and the ***type house*** are determined based ***relevant factors***. 3.4. Selections of the proper breed are well performed based on animal body conformation and the objective of the farm. 3.5. Economic basis to supplementary ***feeding system*** is determined according to enterprise requirements. 3.6. ***Feed and feed supplements*** are confirmed and prepared in line with ***feeding plans.*** 3.7. ***Existing and potential hazards*** in relation to feeding and watering are identified and reported to the supervisor. 3.8. Animal feeding are performed based on the required farm

	objective. 3.9. Specific small ruminant pig disease is identified and preventive measures are applied as organization rule and regulation. 3.10. Product quality, transportation, marketing and cost benefit analysis are performed based on farm management practices.
4. Apply fish production and management	4.1. The farm business is identified based on resource availability and cost benefit analysis. 4.2. The production site selection is determined based on the availability of resource. 4.3. Specific disease related to fish are identified and managed as per organization disease control and prevention procedure. 4.4. Fish anatomy and behaviour are identified and managed to improve farm production and productivity. 4.5. Feeding and watering abnormalities and signs of stress in animals are recorded and reported to the supervisor according to organizational guidelines and procedures 4.6. Bio-security programs are implemented in the different farming activities production and enterprise objectives. 4.7. Product quality and marketing are maintained and regulated in regularly way to reduce risks related to marketing.
5. carryout honey Bee production and management	5.1. The farm business is identified based on resource availability and cost benefit analysis. 5.2. The production site selection is determined based on the availability of resource. 5.3. Specific disease related to honey bee are identified and managed as per organization disease control and prevention procedure. 5.4. Honey bee Anatomy and behaviour are identified and managed to improve farm production and productivity. 5.5. ***Feeding and watering abnormalities*** and signs of stress in animals are recorded and reported to the supervisor according to organizational guidelines and procedures 5.6. ***Bio-security*** programs are implemented in the different farming activities production and enterprise objectives. 5.7. Product quality and marketing are maintained and regulated in regularly way to reduce risks related to marketing.

Variable	**Range**
Type house	May include but not limited to: • Housing large cattle: - conventional barns and loose houses • Calf shed and pen • Purpose oriented cattle houses

Relevant factors	May include but not limited to: • Climatic conditions • Landscaping • Size of farm • Nearby market • Water supply • Topography • Drainage • Size and slope of area • Sun exposure and wind protection • Zero-grazing housing and feeding system • Purpose oriented houses which include milking pen, isolation pen, maternity ward; input and output structures which include milk room, feed store, hay
Forage selection criteria's	May include but not limited to: • Selection of appropriate forage species: Based on agroecology suitability, available land for forage production, needed biomass & nutritive value for the different types of dairy cattle, etc.; • Mange the forage production based on: agronomic practice (land preparation up to harvesting) to optimize growth & quality; • Harvesting and feeding the forage based on: stage of maturity for nutritive value; and • Ensuring year-round forage supplies.
Required feed type and animal status	May include but not limited to: • Forage & concentration feed quality • Quality of water • Feed stuff and ration formulation • Nutrition requirement (different production status and age level) • Concentrates and roughage proportion • Supplementary feed, vitamin and minerals
Breed selection criteria's	May include but not limited to: • Breeding objective – milk production, heifer…. • Heat detection • Capacity of fertility • Nutrition requirement for reproduction • Maintain reproduction record • Record herd reproduction status
Young stock management	May include but not limited to: • Care for new born

	• Colostrum feeding • Separate space • Weaned heifers feed requirement
production performance	May include but not limited to: • Reproductive performance (conception rate, calving interval, age at first calving, days to first service, pregnancy rate) • Milk yield • Lactation period
Fertility problems	May include, but not limited to: • Anoestrous, repeat breeding or prolonged calving interval, abortion, still birth, abnormal vaginal discharge, alteration of the size of reproductive organs, ovarian cyst, in active ovary, hyperplasia and hypoplasia of ovary, metritis, persistence of corpus luetum and other diseases
Health abnormalities	May include, but not limited to: • Heat stress, respiratory infection due to poor ventilation, • Injury due to slippery floor, • Food and water born infection • Deficiency diseases or metabolic diseases
Metabolic disorders	May include, but not limited to: • Hypocalcemia (ketosis) • Ketosis(hypoglycemia) • Acute ruminal acidosis
Screening and testing	May include, but not limited to: • Regular testing for specific diseases
Major Dairy health risks	May include, but not limited to: • Mastitis, tuberculosis, Brucellosis, CBPP, Foot and mouth disease (FMD), LSD, Trichomoniasis
Appropriate measures	May include, but not limited to: • PPE clothes, tools, equipment and working site are maintained and used so as to minimize the transmission of diseases according to the enterprise guide • Culling of the animal • Treating the animal by a veterinarian • Isolating and treating the animal
Prevention and control activities	May include, but not limited to: • Immunization • Early diagnosis & treatment of sick animals • Isolation of sick animals • Quarantine of newly introduced animals • Cleaning and disinfection practice • Visitors and animal movement control

	• Internal and external parasite control programs
Recommendations/ advise	May include, but not limited to: • Implementing prevention methods • Possible interventions e.g. Feed and feeding correction • Culling of animals
Hygienic milk production	May include, but not limited to: • Milk contamination related to animal disease • Milk adulteration • Milk contamination with animal hygiene and milking practice • Milk quality testing and preventive measure
Marketing management	May include, but not limited to: • Cost benefit analysis • Market place and pricing • Milk quality-based pricing • Milk quality testing, collection, transportation, processing and selling.
Production system	May include but not limited to: • Traditional production system • Peri- urban production system • Commercial or more intensive production system
Source of feeds	May include but not limited: • Grass • Agricultural by products • Industrial by products • Minerals and etc
Feed and feed supplements	May include, but not limited to: • Quantity and quality of feed, checked incidence of toxic species and weeds, and checking for cleanliness and freshness including the removal of stale or contaminated feed • Feed supplements may include hay, grain, trace element, vitamins and sources of specific-purpose feeds • Supplementary feeding may be required to cover seasonal, drought or other feed shortages and trace element deficiencies
Beef Breeds of cattle	May include, but not limited to: • Boran, ogaden, shoko mejenger, fogera, zebu(bos taures, indicus), arsi-bale, barca, jesy (red)
Feeding plans	May include, but not limited to: • Target weights, • Amount and type of feed and feed supplements, • How to introduce animals to dietary changes, • Feeding frequency and rates, • Feeding methods and procedures,

	• Weed and pest control strategy, , • Reporting and recording requirements, • Presentation of feed that stimulates activity and allows animals to mimic normal wild activity
Feeding system	May include but not limited to: • Indoor feeding : Pasture and rangeland grazing in open fields • Outdoor feeding : Several different types of feed are fed to livestock including hay, silage, grain and prepared rations
Existing and potential hazards	May include, but not limited to: • Animal movement and handling, • Solar radiation, organic and other dusts, excessive noise, • Moving machinery and vehicles, • The contamination from vermin and the possibility of zoonoses.
Information on feeding plans	May include, but not limited to: • Production objectives • Method of feeding • Problems associated with purchasing feeds • Matching feed supply and demand, and feed ration formulation and treatment strategy.
Feed types	May include but not limited to: • Forage • Concentrate • Crop residue • Additive feeds
Feed budget	May include, but not limited to: • Aspects of the local area and of the enterprise, including delivery patterns, area of operation (climate, geography, farming system, etc.), pasture growth rates and seasonal variation, market availability and price of feeds.
Management system	May include but not limited to: • Intensive • Semi-intensive • Extensive
Good management practices	May include • Watering practices • Housing practices • Breeding practices • Calf rearing and weaning practices • Culling practices
feeding and watering Abnormalities	May include, but not limited to: • General observation of sick animals, shy feeders, weight loss, scouring, greedy (bossy) feeders and ill thrift.
Bio-security	May include but not limited to: • Foot bath • Tyre bath

	• Insect and birds control • Concrete floor • Dipping bath • De-worming • Vaccination • Fumigation
Health problems	May include, but not limited to: • Hoof overgrowth, abnormal growth or broken horn, skin diseases, tick and other exo-parasites infestation and other production and economic diseases
Records	May include, but not limited to: • Breeding record; ancestoral, parental (sire, dam), progeny records, calving interval, lambing interval, kidding interval, age at first calving, lactation period, weaning period, • Health record; diagnosis, treatment, control; and preventive measures taken. • Nutritional record; daily concentrate roughage ratio supplied to calves, lactating cows, heifers, dry cows

Evidence Guide	
Critical Aspects of Competence	Must demonstrate Knowledge and skills to: • Animal farm husbandry practiced identified, performed and manage based on farm type. • The specific husbandry practice for dairy farm, beef, small ruminate, pig, fish and honey bee identified and managed. • Farm site section and housing of farm determined based farm type, farm objective and availability of resource. • Breeding and breed selection of focused on production performance and production objective. • Feed requirements, feeding and feed source well identified and implemented. • Prepare and mix-feed and feed items as directed • Maintain feed quality, presentation and hygiene standards at all times • Farm Specific Animal heath problem are identified and manage on time to improve farm performance. • Monitor and record the condition of animals • Follow feeding plan to meet the nutritional requirements of animals • Handle animals in a safe manner • Identify sick animal and take measure • Monitor the feeding process and report eating and drinking abnormalities • Maintain records • Maintain clean, hygienic and safe feed
Required Knowledge and Attitude	Demonstrate knowledge of: • Organisational feeding program requirements, including OHS and hygiene standards

	• Farm animal husbandry practice and management for Dairy, beef, small ruminant, pig, fish and honey bee. • Animal breed selection criteria and breeding practice • Farm specific disease identification, control and prevention. • Farm animal Nutrition and feed practice • Feed ration formulation and calculation • Good management practices watering, housing, breeding, culling, calf rearing • Types of feed and feed supplements • Animal health and behavior • Farm product quality handling and marketing. • Safe animal handling techniques and procedures • Hazards associated with handling animals and control measures • PPE clothing and equipment and when and how it should be used • Organizational guidelines regarding feeding animals • Recording and reporting routines • Symptom diseased animals • Basic housing and facility requirements • The variation in reproductive capacity among farm animals • Disease threats and control/ preventive measures
Required Skills	Demonstrate skills to: • Apply relevant organizational guidelines and procedures • Applied farm husbandry practice • Applied farm management for dairy, beef, small ruminant, pig, fish and honey bee. • Practical disease identification, control and prevention. • Apply feed preparation techniques • Check feed orders accurately • Dispose of waste in accordance with health and safety standards • Practical application of Reproductive health and management. • Monitor animal health and condition and recognise abnormalities • Communicate and report animal eating and drinking abnormalities and workplace hazards • Measure the reproductive efficiency of the farm animal • Keep the best and cull the poorest breed • Maintain animal records
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Apply Animal Health Related Legislatives, Guidelines, Standards and Work Ethics**
Unit Code	**AGR ANH4 10 0322**
Unit Description	This unit covers the knowledge, skills and attitude required to carryout implementation of a set of local, regional, national and international legislative, policy, regulation, guidelines and standards in livestock industries. In addition, it requires the ability to follow work code of ethics and respond to Livestock emergency situation as per the required standard.
Element	**Performance Criteria**
1. Identify and Apply Animal Health Related Legislative and Guidelines	1.1. ***National animal health service structure*** and ***Livestock Industries Stakeholders*** in the country is identified. 1.2. The types of animal health services establishment and work policy at regional, national and international level are identified. 1.3. The formulation and implementation of public veterinary policy at the local, national, regional and international levels through legislation, regulation and operational strategy are identified and follow. 1.4. Animal health policy and strategies are recognized and updated contentiously. 1.5. The legislation, regulations, guidelines related to related to animal health service, animal production, breeding, handling, transportation, marketing and ***animal product*** are recognized and applied. 1.6. Relevant public policy related to veterinary medicine, animal and human health such as health inspections and certification, food safety, animal disease control, animal welfare and trade in animals and animal products should be identified and addressed. 1.7. The legislation and organizational structure of the specific Member Country and the global community (e.g., OIE, Codex Alimentarius Commission) are identified and applied based on its applicability on members country. 1.8. Industry ***Mission***, rule and regulation of the industry is identified. 1.9. ***Information*** on working in the industry, including employment terms and conditions is collected and interpreted.
2. Understudy and Apply Animal health related Standards and Livestock Emergency Guidelines and Standards (LEGS)	2.1. Personal work practices are performed to contribute positively to quality, productivity and effective relationships in the work environment. 2.2. ***Hygiene protocols*** are completed to ensure animal health and products of their origin. 2.3. ***Security protocols*** are completed to ensure animal safety and sanitation of their products.

	2.4. Animal facilities and workplace protocols are evaluated in relation to animal and product specification. 2.5. Animals and products are described using identifiable characteristics. 2.6. A range of traceability ***animal, product and by-product characteristics*** are recognized in accordance with organizational requirements. 2.7. ***Animal health related*** organizational, local, regional, national and international are identified and implanted as per the required standards. 2.8. Animal health policy and strategies are recognized in ***Livestock Emergency Situations*** 2.9. Livestock Emergency Guidelines and Standards (LEGS) are identified and applied for emergency response. 2.10. The application LEGS are identified and applied to emergency situation. 2.11. During the occurrence of emergency, the livestock situation, livelihood and emergency situation as well identified by prior assessment. 2.12. ***Core standard common to all livestock innervation*** on emergency situation, those help for general principle, decision- making and planning are identified. 2.13. The main ***specific LEGS innervation*** is well identified to respond emergency situation.
3. Identify and follow Animal Health Work Ethics	3.1. Organization employment guid line, and employment role and responsibility are identified and applied. 3.2. Work schedule is followed in accordance with organisational ***policies and procedures.*** 3.3. Job-specific work practices are performed to comply with the principles of ethical conduct, OHS guidelines, environmental processes and industry best practice. 3.4. Every veterinary technician is identified professional code of ethics and obligated. 3.5. Essential characteristic of Code of Ethics and ***main functions*** are identified. 3.6. The ***basic component of Code of ethics*** is well understood and applied. 3.7. The need for workplace confidentiality is understood and observed. 3.8. Industry and workplace-specific management structures and lines of reporting are complied. 3.9. ***Work routines*** are completed with consideration of animal health, wellbeing priorities and product hygiene.

	3.10. Animal facilities and workplace protocols are evaluated in relation to animal and product specification. 3.11. Animal handling and interaction are conducted with consideration of the social and behavioural characteristics of animals.

Variable	**Range**
National animal health service structure	May include, but not limited to: • The structure of the veterinary health service from Federal to the smallest unit (Kebele) level.
Livestock Industries Stakeholders	May include, but not limited to: • National and Regional Veterinary Laboratories, National Veterinary Institutes, Veterinary Drug and Feed Control Authority, National Agricultural Research Institute, Agricultural Development Institute.
Animal product	May include, but not limited to: • Meat, egg, poultry, fish, milk, pork
Mission	May include, but not limited to: • A formal summary of the aims and values of a company, organization, or individual.
Information	May include, but not limited to: • Services available in each sector: ➢ Animal technology, including biomedical research ➢ Animal movement control and regulation ➢ Captive animals ➢ Companion animal services ➢ Veterinary practices • Relationships between the sector and other industries • Industry work conditions • Legislation that affects the industry • Employment terms and conditions • Career opportunities within the industry • Appropriate industry work ethics • Industry quality assurance standards.
Hygiene protocols	May include, but not limited to: • Appropriate reprocessing of reusable equipment • Aseptic technique • Housing and work area cleaning and disinfecting standards • Personal hygiene practices especially washing and drying hands before and after animal and products contact and/or any activity likely to cause cross-contamination • Safe handling and disposal of sharps and other clinical, related and general waste • Surface cleaning and management of blood and bodily fluid spills • Use of PPE clothing and equipment and change as appropriate for

	the intended use.
Security protocols	May include, but not limited to: • Checking for pests within animal housing or enclosures • Checking there are no unauthorised people in animal enclosures • Checking that locks and slides are in good working order • Ensuring animals are safe and secure in their housing • Ensuring medications and treatments are stored in accordance with legislative requirements • Identifying any animal housing faults that may result in escape • Maintaining structures in good order.
animal, product and by-product characteristics	May include, but not limited to: • Age, sex and size • Coat or skin colours and texture • Eye colour • Markings, patterns and permanent scars • Toe nail colour • Microchip, ear tags, tattoos and markings and leg bands • Movement and behaviour of animals. • Date of production • Shelf life • Techniques of storage • Preservatives used
Animal health related	May include, but not limited to the standard of: • Veterinary service and quality standard • Animal health centre and working area stranded • Operational standard • Animal handling and welfare standard • Animal product and by product – production, distribution, storage and usage quality standard. • Animal health related waste disposal standard.
Livestock Emergency Situations	May include, but not limited to: • Epidemic, Epizootic, Pandemic, Drought, Flood.
Core standard common to all livestock innervation	May include: • Participation • Preparedness • Competencies • Initial assessment and reposed identification • Technical assessment and innervation • Monitoring and evaluation • Policy and advocacy • Coordination
Specific LEGS innervation	May include, but not limited to: • Technical standard for Destocking

	• Technical standard for Veterinary support • Technical standard for ensuring feed supplies • Technical standard for the provision of water • Technical standard for livestock shelter and settlement • Technical standard for livestock shelter and settlement • Technical standard for the provision of livestock/restocking
Main Functions	May include, but not limited to: • A code communication to the public and to the member of professional. • A code is a general guide for profession ethical conduct. • A code of ethics provides standard of acceptable conduct – for disciplinary procedure.
Basic component of Code of ethics	May include, but not limited to: • Aid society and animals • Prevent and relieve the suffering of animal • Competent through commitment to log-life learning • Control of zoonotic disease • Collaborate with another veterinary professional • Protect client confidential information • Accountable for individual professional judgement • Safeguarded the public and the profession • Assist with effort to ensure condition of employment • Uphold the rule and regulation • Represent their credential
Policies and procedures	May include, but not limited to: • Animal welfare, including ethical use of animals for scientific or teaching purposes • Environmental sustainability practices • Infection control plans • Quality assurance systems • Standard operating procedures.
Work routines	May include, but not limited to: • Assisting others in completion of tasks within limits of current level of competence • Catching and handling animals under supervision • Checking animals for signs of distress, illness and injury • Checking security and repair of animal housing, equipment and general facility • Cleaning and grooming animals under supervision • Cleaning and preparation of animal cages, enclosures, exhibits, displays, general work areas, office, reception and customer service areas • Confirming all animals are in their cages or enclosures • Documenting work tasks in accordance with workplace procedures • Operating general equipment used to complete workplace cleaning

	routines • Picking up rubbish, removing branches or other unsightly items not part of exhibit or animal housing • Reporting animal health concerns to supervisor • Stocktaking and re-supply of items • Timeframes for completing tasks.
Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and attitude to: • Identify and Apply Animal Health Related Legislative and Guidelines • Identify and Apply Animal Health Related rule and regulation • Identify and Apply Animal Health standards • Livestock Emergency Guidelines and Standards (LEGS) are identified. • Identify and follow Animal Health Work Ethics • Identify the country's veterinary industry structure • Conduct animal care work practices with consideration to animal needs in an ethical and humane manner • Comply with relevant legislation, regulations and codes of practice, including animal welfare and OHS legislation • Communicate effectively with supervisor and other staff using industry related terminology and follow task instructions to complete work activities.
Required Knowledge and Attitude	Demonstrate knowledge of: • Update understanding of local, regional, national and international legislation, policy, rule, regulation, guideline and standards applied for Animal health. • Livestock Emergency Guidelines and Standards (LEGS) • Understanding and application of work ethics • Animal temperaments and behaviours in order to develop an understanding of the associated hazards and risks • Basic legislative and regulatory compliance requirements in animal care workplaces • Common diseases, ailments, injuries and other impacts on animal health and wellbeing • Communication procedures, systems, and technology relevant to the organisation and the individual's work responsibilities • Effective communication in a work team • Environmental impacts on animal health and wellbeing • General job responsibilities in a range of animal care sectors • Hazards associated with handling animals and control measures • Housing, exercise, social and activity needs of animals • Industry employment terms and conditions and career pathways • Industry expectations of conduct, presentation and work performance, including quality and productivity • Terminology and language variations used by workplace staff and the public
Underpinning Skills	Demonstrate skills to: • Application of work ethics and Livestock Emergency Guidelines and Standards (LEGS) • Application of animal health related local, regional, national and

	international legislation, policy, rule, regulation, guideline and standards. • Comply with hygiene practices to ensure human and animal health • Comply with OHS and animal welfare legislations and regulations • Comply with workplace confidentiality requirements • Follow sequenced written instructions, and record information accurately and legibly • Interpret and use industry terminology in a range of situations • Interpret workplace duties and conditions of employment • Read and follow organisational policies and procedures, including OHS • Oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor • Work with and relate to people from a range of cultural, social and religious backgrounds • Use safe and approved animal handling techniques
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Health Level IV	
Unit Title	**Identify and Handle Diseases of Wild Animals**
Unit Code	**AGR ANH4 11 0322**
Unit Description	This unit covers the knowledge and skills required to implement the identification, classification and handling of major diseases of wild animals in the country. This competence requires the application of knowledge and skills to capture and restrain wild animals humanly, to be able to identify and monitor major wild animal diseases, and apply the proper treatment, disease prevention and control measures.

Element	Performance Criteria
1.Aquire basic information on wild animals and parks	1.1. Behaviour of some species of wild animals is understood. 1.2. ***Common species*** of wild animals and their eco-tourism importance in Ethiopia are mentioned. 1.3. ***National parks*** and respective species of endemic wild animals it hosts in Ethiopia are mentioned. 1.4. Hazards in handling wild animals to self, bystanders, the public and animals are recognised and action is taken according to the enterprise guide lines.
2. Identify and handle major infectious disease of wild animals	2.1. Threats to wild animals including diseases, predators and natural disasters are explained. 2.2. Personal hygiene and cleanliness standards are maintained in accordance with ***OHS procedures*** and organisational guidelines and procedures. 2.3. ***Major Infectious diseases of wild animals*** caused by micro-organisms are identified based on their occurrence, clinical sign and symptoms, mode of transmission, laboratory and post mortem findings according to the national organizational guideline. 2.4. Wild animals are ***captured, restrained and handled*** for diagnosis and treatment, according to the enterprise regulation. 2.5. Awareness is created on ***signs of stress*** in wild animals when assessing the comfort of the animal being restrained. 2.6. Diagnosis of animal disease is undertaken according to the enterprise guide lines. 2.7. Diseases causing microorganisms are identified by their clinical manifestations, pathological changes and through laboratory diagnosis; by collecting ***appropriate spacemen*** from clinically sick and dead animals for specific suspected diseases according the laboratory requirements. 2.8. Prescribed ***animal treatments*** are carried out as required, under supervision, according to manufacturer's instruction and enterprise protocol.

	2.9. Prevention and control methods for each of the diseases are identified and outlined according to the enterprise guideline. 2.10. ***Public and economic importance*** of the diseases are identified and advice is given and appropriate prevention and control programs are implemented as required under supervision of a veterinarian.
3.Identify and handle non-infectious disease of wild animals	3.1. Common ***non Infectious diseases of wild animals*** are identified based on their occurrence, clinical sign and symptoms, laboratory and post mortem findings; according to the national and organizational guideline. 3.2. Prescribed treatments for the diseases are identified and their usage outlined as required, according to manufacturer's instruction, enterprise protocol and the national standard veterinary treatment guideline. 3.3. ***Prevention and control methods*** for each of the diseases are identified and outlined according to the enterprise guideline. 3.4. Economic importance of the diseases is identified and advice is given and appropriate prevention and control programs are implemented as required under supervision.

Variable	**Range**
Common species of wild animals	May include, but not limited to: • Redfox • Chilada baboon • Minilik bushbag • Walya ibex • Mountain nyala • Giant mol rat (ayitemegot) • Swine heart beast • Walia Ibex (wild goat), found in the Semein highlands. • Mountain Nyala (Dega Agazon), found in the Bale Mountains 'Gelada' or 'Chelad' baboon, found in the Semein highlands. • Menilik's Bushbuk ('Dikula') in the Shoan and Bale highlands. • Swayne's Hartebeest ('Korkay'), found in the Nechsar park and the Sankalle sanctuary. • Semein Fox ('Key Kebero'), found in the Bale and Semein Highlands. • Wild Ass (Yedur Ahiya), found in the Afar and Southeast Lowlands • These rare animals, especially the Walia Ibex and Semien Fox, are approaching extinction
National parks in Ethiopia	May include, but not limited to: • Awash park national park • Semien mountain national park • Bale mountain national park • Nechisar national park

	• Mago national park • Omo national park
OHS Procedures	May include, but not limited to: • Appropriate handling reprocessing of reusable equipment • Using aseptic technique • Cover cuts and abrasions with waterproof dressing and change as necessary • Maintain personal immunisation/vaccination requirements for working with animals where required • Personal hygiene practices especially washing and drying hands before and after animal contact and/or any activity likely to cause cross-contamination • Safe handling and disposal of sharps and other clinical, related and general waste • Use of PPE clothing and equipment and change as appropriate for the intended use.
Hazards in the place work	May include, but not limited to: • Zoonoses • Chemical spillage • Animal bites, scratches and crush injuries • Biological hazardous wastes • Handling of chemicals and medicines • Gas leakage • Inhalation of aerosol particles • Intraocular contamination • Manual handling, including carrying, lifting and shifting • Needle pricks and cuts from other sharps • Release of infective agents (animal and human) • Slippery or uneven work surfaces.
Major infectious diseases of wild animals	May include, but not limited to: • Bacterial diseases • Viral diseases • Fungal diseases • Zoonotic diseases
Wild animals	May include, but not limited to: • Wild birds and Mammals
Capturing, restraining and handling	May include, but not limited to: • Hand restraining • Chemical restraining • Traps • Wild animals are not conditioned to being handled and generally stress much faster than captive animals familiar with human presence. Wild animals should therefore be handled as efficiently as possible. • Restraint should be avoided in animals which are pregnant, with

	young or breeding as they will have a decreased ability to cope with more stress
Signs of stress	May include, but not limited to: • Birds: ➢ Vocalisation ➢ Excessive struggling ➢ Defecation ➢ Increase in heart rate ➢ Panting/heat stress • Mammals: ➢ Vocalization ➢ Clenching of teeth ➢ Self biting ➢ Attempts to escape ➢ Increase in heart rate ➢ Panting/heat stress ➢ Animal is limp or closes its eyes (mammals) ➢ Aggression ➢ Urination/defecation ➢ Excessive struggling ➢ Cyanosis (bluing) of the nose and/or lip
Appropriate spacemen	May include, but not limited to: • Specific type of samples to be collected for each infectious diseases of wild animals; which may include whole blood, serum, urine, faces, skin scraping, swab from body discharges, abscess or tissue samples
Animal treatments	May include, but not limited to: • Treatments used in the routine preventative health care of animals that are available over the counter and have been approved by supervisor or are part of the approved animal care plan • Treatments prescribed by a veterinarian
Public and economic importance	May include, but not limited to: • Zoonotic importance • The loss of species of endemic wild animals • Cost of treatment and control
Non Infectious diseases of wild animals	May include, but not limited to: • Allergies • Chemical toxicities • Genetic • Metabolic • Nutritional • Neoplastic • Physical traumas
Preventive and control methods	May include, but not limited to:

	• Prophylactic (vaccines or other preventive drugs) or therapeutic treatment, isolation, quarantine, movement control, burying or incineration of dead body. • Improve wild animal protection
Animal health risks	May include, but not limited to: • Deforestation, Hunting, marshy area, drought, transmitting vectors, contaminated feeds and water, exposure of the animal to pathogens, species and breeds of the animal.

Evidence Guide	
Critical Aspects of Competence	Must ddemonstrate knowledge and skills to: • Implement work area policies, legislations, regulations and directives • Ecotourism importance of wild animals • Capture and handling of wild animals for diagnosis or treatment • Recognize the signs and symptoms of major wild animal diseases • Identify a specific disease and its corresponding treatment, prevention and control protocols • Identify and collect appropriate specimens for specific diseases • Maintain health and well-being of animals • Communicate effectively with clients and staff and provide advice to the clients • Maintain work environment and personal hygiene
Required Knowledge and Attitude	Demonstrate knowledge of: • Protocols for hazard identification and risk minimisation Organisational guidelines and procedures, including OHS and hygiene standards • Relevant legislation • Anatomy and physiology of wild animals • Normal behaviour of an wild animals in different age, environment and physiological groups • Wild species and national parks in Ethiopia • Housing, exercise, social and activity needs of these animals • Principles Basic clinical and laboratory diagnosis • Disease and disease processes • Various diseases affecting wild animals • Signs and symptoms of animal diseases • Wild animal care and service systems and their relation with disease • The local climatic and agro ecological conditions • Concepts of prevention and control of diseases
Required Skills	Demonstrate skills to/in: • Apply organisational guidelines and procedures

	• Identify obvious signs &symptoms of wild animal diseases • Appropriate handling and restraining of wild animals • Performing clinical and laboratory diagnosis • Perform simple laboratory tests • Apply various prophylactic and therapeutic treatment patterns • Follow OHS and waste management procedures and other organisational guidelines and procedures; • Select and apply the procedures to perform a range of defined tasks; follow treatment instructions; and record accurately and legibly the information collected • Oral communication skills to fulfil the job role as specified by the organisation including questioning techniques, active listening, asking for clarification and consulting with supervisor • Complete arithmetic calculations and determine anti animal drug doses • Interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds • Problem-solving skills to use available resources &to prioritise daily tasks.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational standard : Animal Health Level IV	
Unit Title	**Develop value chain analysis**
Unit Code	**AGR ANH4 12 0322**
Unit Descriptor	This unit covers the knowledge, skills, and attitude needed to Understand value chain ,Identify concepts of value chain ideas Develop the value chain and Upgraded value addition

Elements	**Performance Criteria**
1. Understand concepts of value chain	1.1 ***Concept of value chain*** are understood. 1.2 Value chain scopes are understood and identified. 1.3 ***Principle of value chain*** are understood and identified. 1.4 Value chain ***characteristic*** are understood and identified. 1.5 Value chain ***Importance*** are discussed and understood. 1.6 ***Concept of value addition*** are understood and determined.
2.Identify Value chain analysis	2.1 ***Dimension*** and ***structures*** of Value chain are identified and interpreted 2.2 ***Value chain actors*** are identified according to the objective and interest or need of chain actors 2.3 ***Value chain maps*** are illustrated for different ***agricultural products*** 2.4 Value chain techniques for **value addition** are identified and analyzed 2.5 ***Contract farming*** system is established to promote value chain.
3.Develop value chain	3.1 Value chain ***parameter***s are analyzed to compare the gaps between the existing and the benchmark. 3.2 ***Constraints and gaps*** are collected, analyzed and ranked according to the priority used to develop value chain 3.3 ***Steps of value chain*** development are identified 3.4 Value Chain ***selection techniques*** are identified to develop value chain 3.5 Potential ***interventions*** for value chain development are identified
4. Upgrade value addition	4.1 ***Environmental considerations*** are understood to upgrade value addition development 4.2 Value chain actors are identified for ***Value addition*** 4.3 Value chain is ***upgraded*** for agricultural products to measure performance of value chain development 4.4 Custemer feedbacks are collected, organized and documented to improve Custemer satisfaction

Variable	**Range**

Concept value chain	May include, but not limited to • Market oriented products • General Principle • Value chain actor • Mapping • Value addition
Principles of value chain	May include, but not limited to • Value chain mapping • Identifying the distribution of benefits of actors • Examining the role of upgrading • Governance in the value chain
Characteristic	May include, but not limited to • Inbound logistic • Operation • Out bound logistic • Marketing • Sales • Services
Importance	May include, but not limited to • Simple and better way to identify gaps and technologies. • Increases efficiency and systemic competitiveness of local enterprise • Primary targets involvement between local sector and sub sector • Reduces production costs and improves profitability • Improves customer satisfaction by providing quality product and service
Dimension	May include, but not limited to • Sourcing of Inputs and supplies • Production capacity and technology • End-markets and trade • Governance of value chains
Structures	May include, but not limited to • Input sector: • Farm/production sector: • Product sector
Value chain actors	May include, but not limited to • Farmers, • Traders, • Processors, • Transporters • Wholesalers • Retailers and final consumers

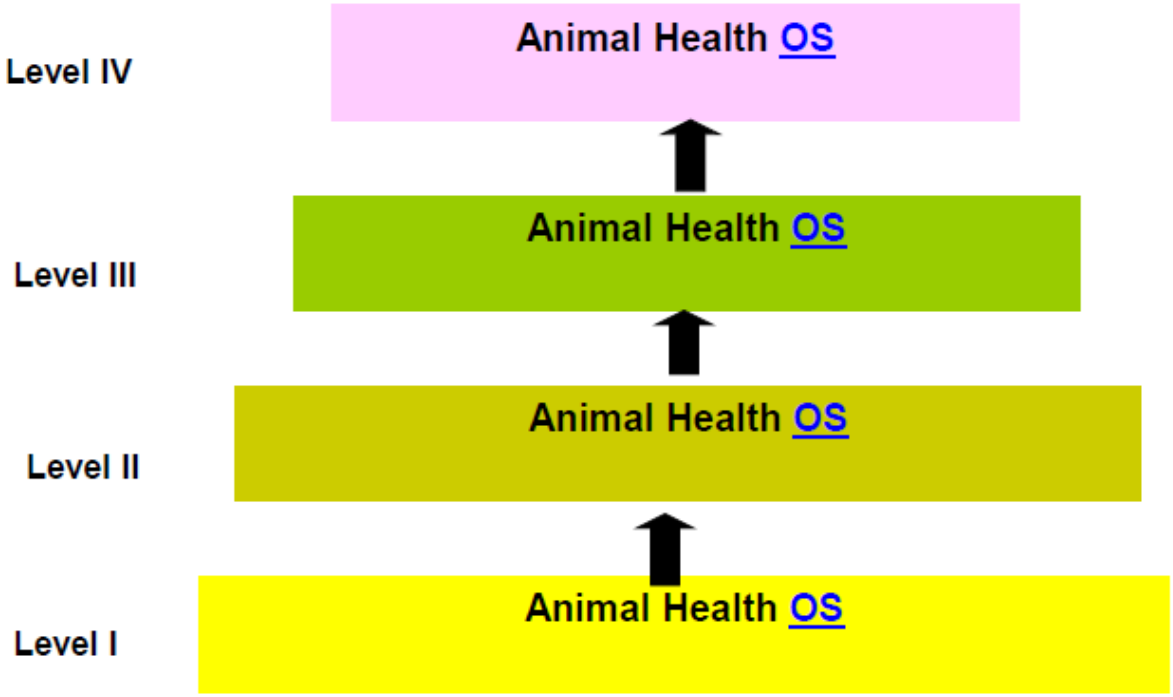
Agricultural sectors	May include, but not limited to • Crop farming • Forestry • Livestock • Fisher and aquaculture • Agricultural cooperative • Agricultural extension service
Parameters	May include, but not limited to • Yield • Quality • Cost • Time
Technology constraints	May include, but not limited to • Marketability • Profitability • Capability and Usefulness • Functionality • Import Substitution • Feasibility • Adaptability • Potential Impact to the MSE • Woman Empowerment • Employment
Steps of value chain	May include, but not limited to • Value chain selection • Data collection • Value chain mapping • Value analysis • Gap identification • Prioritizing constraints • Technology identification & categorization
Selection technique	May include, but not limited to • Integration economic • Environmental • Social • Institutional
Environmental considerations .	May include , but not limited to: • Sustainability of the land use system for production and processing • Sources of energy • Efficiency of energy use • Greenhouse gas emissions • Water use efficiency and possibilities of contamination

	• Quantity and character of chemicals being used • Waste production and management
Value addition	May include, but are not limited to: • measured against its contribution to the customer • Technical benefits/features • Location benefits/features • Aesthetic benefits/features • Information benefits/features
Contract farming	May include, but are not limited to: • Agreement between buyer and seller • Farmer and processing making firm for production • Supple of agricultural product
Upgraded	May include, but are not limited to: • Farm crop • Milk and Milk Products • Meat and Meat Products • Poultry Products • Fish and Fish Products • Honey and Honey Products

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Understand concept of value chain • Identify Value chain actors • Apply techniques for value addition • Understand selection technique to develop value chain • Identify potential interventions to value chain analysis • Evaluate value chain addition • Contract farming system is established to promote value chain • Describe value chain upgraded and identify environmental issues for value chain development
Required Knowledge and Attitude	Demonstrate knowledge of: • Understand concepts of value chain • Understand and Recognize characteristic of value chain • Understand dimension and structures of value chain • Identify principles of value chain for agricultural production • Identify value chain actors and Illustrate value chain mapping in agricultural product • Identify value chain analysis improve vale chain development • Understand the Bench mark analyze to develop value chain analysis

	• Observe environmental issue to upgrade Value chain • Determine value chain upgrade and focus on Value chain addition
Required Skills	Demonstrate the Skills to : • Identify concepts of value chain • Recognize and describe characteristic of value chain • Describe dimension and structures of value chain • Apply principles of value chain for agricultural production • Classify value chain actors and Illustrate value chain mapping in agricultural sector • Analyze the Bench mark to develop value chain analysis • Apply value addition and determine value chain upgrade development value chain analysis • Contract farming system is established to promote value chain • Describe value chain upgraded and identify environmental issues for value chain development
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Sector: Agriculture
Sub Sector: Animal Health



Workshop Participants List

Occupational Standards Development in Animal Health

No.	Full Name	Qualification	Organization	Position	Telephone	E-mail
1.	Dr. KIFLE WONDIMAGEGNEHU	MSc, DVM, BA	ATVET College	Instructor	0986878895	kwondimagegne@yahoo.com
2.	Dr. Dereje Tadesse	MSc, DVM	NGO	Project coordinator	0913105582	dtadesse65@gmail.com
3.	Yeshiwas Tarekegn	MSc, DVM	ATVET College	Instructor	0910749374	yeshiwastarekegn@gmail.com
4.	Milion Bulo	MSc	ATVET	Expert	0912253251	milionbulo@gmail.com
5.	MIHRETU AYELE (Dr.)	MSc, DVM	ATVET College	Instructor	0912457702	mihrevet@gmail.com
6.	Haileyesus Ermed (Dr.)	MPH, DVM	MoA	Expert	0912604547	mekidesmitiku@gmail.com
7.	Dr. BARECHA BERHANU	DVM	Ministry of Agriculture	Meat inspector	0911081780	naolabdi@gmail.com
8.	Asmare Mossie	MSc	Federal TVET agency	OS dev. Expert	0922402626	asmare410@gmail.com
9.	Dr. Tewodros Tadesse	DVM	ATVET	instructor	0912026793	_____