****

**REPUBLIC OF KENYA**

**COMPETENCY BASED CURRICULUM**

**FOR**

**DAIRY FARM MANAGEMENT**

**LEVEL 6**

 

 TVET CDACC

 P.O. BOX 15745-00100

 NAIROBI

First published 2019

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# FOREWORD

The provision of quality education and training is fundamental to the Government’s overall strategy for social economic development. Quality education and training will contribute to achievement of Kenya’s development blueprint and sustainable development goals.

Reforms in the education sector are necessary for the achievement of Kenya Vision 2030 and meeting the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution and this resulted to the formulation of the Policy Framework for Reforming Education and Training (Sessional Paper No. 4 of 2016). A key feature of this policy is the radical change in the design and delivery of TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that this curriculum has been developed.

It is my conviction that this curriculum will play a great role towards development of competent human resource for the Agriculture sector’s growth and sustainable development.

**PRINCIPAL SECRETARY, VOCATIONAL AND TECHNICAL TRAINING**

**MINISTRY OF EDUCATION**

# PREFACE

Kenya Vision 2030 aims to transform the country into a newly industrializing, “middle-income country providing a high-quality life to all its citizens by the year 2030”. Kenya intends to create a globally competitive and adaptive human resource base to meet the requirements of a rapidly industrializing economy through life-long education and training. TVET has a responsibility of facilitating the process of inculcating knowledge, skills and attitudes necessary for catapulting the nation to a globally competitive country, hence the paradigm shift to embrace Competency Based Education and Training (CBET).

The Technical and Vocational Education and Training Act No. 29 of 2013 and Sessional Paper No. 4 of 2016 on Reforming Education and Training in Kenya, emphasized the need to reform curriculum development, assessment and certification. This called for a shift to CBET in order to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

TVET Curriculum Development, Assessment and Certification Council (TVET CDACC) in conjunction with Dairy Sector Skills Advisory Committee (SSAC), German International Cooperation and Ministry of Agriculture, Livestock and Fisheries have developed this curriculum. TVET CDACC in conjunction with Micro Enterprises Support Programme Trust (MESPT) have reviewed this curriculum and incorporated Food Safety.

This curriculum has been developed following the CBET framework policy; the CBETA standards and guidelines provided by the TVET Authority and the Kenya National Qualification Framework designed by the Kenya National Qualification Authority.

This curriculum is designed and organized with an outline of learning outcomes; suggested delivery methods, training/learning resources and methods of assessing the trainee’s achievement. The curriculum is competency-based and allows multiple entry and exit to the course.

I am grateful to the Council Members, Council Secretariat, Dairy SSAC, Food Safety SSAC, expert workers and all those who participated in the development and review of this curriculum.

**CHAIRMAN, TVET CDACC**

# ACKNOWLEDGMENT

This curriculum has been designed for competency-based training and has independent units of learning that allow the trainee flexibility in entry and exit. In developing the curriculum, significant involvement and support was received from various organisations.

I appreciate NEPAD Planning and Coordinating Agency (NPCA) of the Africa Union Commission and German Ministry of Economic Cooperation and Development (BMZ) through its implementing agency German International Cooperation (GIZ) GmbH which enabled the development of this curriculum through the CAADP ATVET project. I also appreciate the office of the National Coordinator of GIZ CAADP ATVET Project which was instrumental in the cooperation between the project team, Ministry of Agriculture, Livestock and Fisheries (MoALF) and Ministry of Education.

Much gratitude goes to Micro Enterprises Support Program Trust (MESPT) who initiated the review process and the incorporation of Food Safety in the Curriculum. I acknowledge the Danish International Development Agency (DANIDA) and the European Union (EU) who sponsored the review process.

I recognize with appreciation the role of the Dairy and Food Safety Sector Skills Advisory Committee (SSAC) in ensuring that competencies required by the industry are addressed in the curriculum. I also thank all stakeholders in the Agriculture sector for their valuable input and all those who participated in the process of developing this curriculum.

I am convinced that this curriculum will go a long way in ensuring that workers in Dairy Farm Management acquire competencies that will enable them to perform their work more efficiently.

**COUNCIL SECRETARY/CEO**

**TVET CDACC**ACRONYMS

ATVET Agricultural Technical and Vocational Education and Training

BC Basic Competency

CAADP Comprehensive Africa Agricultural Development Programme

CBET Competency Based Education and Training

CDACC Curriculum Development Assessment and Certification Council

CR Core Competency

CU Curriculum

DA Dairy

DANIDA Danish International Development Agency

FM Farm Management

KCSE Kenya Certificate of Secondary Education

KNQA Kenya National Qualifications Authority

MESPT Micro Enterprises Support Programme Trust

MoALF Ministry of Agriculture Livestock and Fisheries

PPE Personal Protective Equipment

SSAC Sector Skills Advisory Committee

TVET Technical and Vocational Education and Training

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# KEY TO UNIT CODE

 **DA /CU/FM/BC/CR/01/ 6/B**

Industry or sector

Curriculum

Occupational area

Type of competency

Competency number

Competency level

Version control

**COURSE OVERVIEW**

This course is designed to equip individuals with competencies for management of a dairy farm. It entails laying out the farm, producing dairy forage, feeding dairy animals, milking dairy animals, raising young stock, managing herd health, breeding the herd, formulating dairy feeds, designing farm structures and managing a dairy enterprise.

This course consists of the following basic and core units of learning:

**Basic Units of Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** | **Credit factor**  |
| DA/CU/FM/BC/01/6/B | Communication skills | 40 | 4 |
| DA/CU/FM/BC/02/6/B | Numeracy skills | 60 | 6 |
| DA/CU/FM/BC/03/6/B | Digital literacy | 60 | 6 |
| DA/CU/FM/BC/04/6/B | Entrepreneurial skills | 100 | 10 |
| DA/CU/FM/BC/05/6/B | Employability skills | 80 | 8 |
| DA/CU/FM/BC/06/6/B | Environmental literacy | 40 | 4 |
| DA/CU/FM/BC/07/6/B | Occupational safety and health practices | 40 | 4 |
| **Total** | **420** | **42** |

**Core** **Units of Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** | **Credit factor** |
| DA/CU/FM/CR/01/6/B | Dairy farm layout | 70 | 7 |
| DA/CU/FM/CR/02/6/B | Dairy farm structures development | 130 | 13 |
| DA/CU/FM/CR/03/6/B | Dairy forage production | 200 | 20 |
| DA/CU/FM/CR/04/6/B | Dairy feed formulation | 250 | 25 |
| DA/CU/FM/CR/05/6/B | Dairy animals breeding | 140 | 14 |
| DA/CU/FM/CR/06/6/B | Dairy animals feeding | 270 | 27 |
| DA/CU/FM/CR/07/6/B | Dairy animals milking | 80 | 8 |
| DA/CU/FM/CR/08/6/B | Dairy young stock management | 200 | 20 |
| DA/CU/FM/CR/09/6/B | Dairy herd health management | 210 | 21 |
| DA/CU/FM/CR/10/6/B | Dairy farm business management | 70 | 7 |
|  | Industrial attachment | 480 | 48 |
| **Total** | **2100** | **210** |
| **Grand total** | **2520** | **252** |

The total duration of the course for an average trainee is 2520 hours which is equivalent to 84 weeks at 30 hours of learning per week including 480 hours (16 weeks) of field attachment.

**Entry Requirements**

An individual entering this course should have any of the following minimum requirements:

1. Kenya Certificate of Secondary Education (KCSE) mean grade C- (minus)

**Or**

1. Craft Certificate in Dairy Farm Management Level 5

**Or**

1. Equivalent qualifications as determined by Kenya National Qualifications Authority (KNQA)

**Field attachment**

An individual enrolled in this course will undergo a field attachment for a period of 16 weeks in a dairy production farm.

**Assessment**

The course will be assessed at two levels:

1. **Internal assessment**: conducted continuously by the trainer (internal assessor) who is monitored by an accredited internal verifier
2. **External assessment:** conducted by an accredited external assessor who is monitored by an accredited external verifier

The assessors and verifiers are accredited by TVET CDACC which also coordinates external assessment.

**Trainer qualification**

A trainer for this course should have a higher qualification than the level of this course

**Certification**

An individual will be awarded a Record of Achievement on demonstration of competence in a unit of competency. To be awarded Certificate in Dairy Farm Management Level 6, an individual must demonstrate competence in all the units of competency.

These certificates will be awarded by TVET CDACC in conjunction with the training provider.

# BASIC UNITS OF LEARNING

##

# COMMUNICATION SKILLS

**UNIT CODE:** DA/CU/FM/BC/01/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Communication Skills

**Duration of Unit:** 40 hours

**Unit Description**

This unit covers the competencies required to demonstrate communication skills. It involves, meeting communication needs of clients and colleagues; developing communication strategies, establishing and maintaining communication pathways, conducting interviews, facilitating group discussion and representing the organization.

**Summary of Learning Outcomes**

1. Meet communication needs of clients and colleagues
2. Develop communication strategies
3. Establish and maintain communication pathways
4. Promote use of communication strategies
5. Conduct interview
6. Facilitate group discussion
7. Represent the organization

**Learning Outcomes, Content and Methods of assessment**

| **Learning Outcome** | **Content** | **Methods of assessment**  |
| --- | --- | --- |
| 1. Meet communication needs of clients and colleagues
 | * Communication process
* Modes of communication
* Medium of communication
* Effective communication
* Barriers to communication
* Flow of communication
* Sources of information
* Organizational policies
* Organization requirements for written and electronic communication methods
* Report writing
* Effective questioning techniques (clarifying and probing)
* Workplace etiquette
* Ethical work practices in handling communication
* Active listening
* Feedback
* Interpretation
* Flexibility in communication
* Types of communication strategies
* Elements of communication strategy
 | * Interview
* Written texts
 |
| 1. Develop communication strategies
 | * Dynamics of groups
* Styles of group leadership
* Openness and flexibility in communication
* Communication skills relevant to client groups
 | * Interview
* Written texts
 |
| 1. Establish and maintain communication pathways
 | * Types of communication pathways
 | * Interview
* Written texts
 |
| 1. Promote use of communication strategies
 | * Application of elements of communication strategies
* Effective communication techniques
 | * Interview
* Written texts
 |
| 1. Conduct interview
 | * Types of interview
* Establishing rapport
* Facilitating resolution of issues
* Developing action plans
 | * Interview
* Written texts
 |
| 1. Facilitate group discussion
 | * Identification of communication needs
* Dynamics of groups
* Styles of group leadership
* Presentation of information
* Encouraging group members participation
* Evaluating group communication strategies
 | * Interview
* Written texts
 |
| 1. Represent the organization
 | * Presentation techniques
* Development of a presentation
* Multi-media utilization in presentation
* Communication skills relevant to client groups
 | * Interview
* Written texts
 |

**Suggested Methods of Instruction**

* Discussion
* Role playing
* Simulation
* Direct instruction

**Recommended Resources**

* Desktop computers/laptops
* Internet connection
* Projectors
* Telephone

# NUMERACY SKILLS

**UNIT CODE:** DA/CU/FM/BC/02/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Numeracy Skills.

**Duration of Unit:** 60 hours

**Unit Description**

This unit describes the competencies required to demonstrate numeracy skills. It involves applying a wide range of mathematical calculations for work; applying ratios, rates and proportions to solve problems; estimating, measuring and calculating measurement for work; using detailed maps to plan travel routes for work; using geometry to draw and construct 2D and 3D shapes for work; collecting, organizing and interpreting statistical data; using routine formula and algebraic expressions for work and using common functions of a scientific calculator.

**Summary of Learning Outcomes**

1. Apply a wide range of mathematical calculations for work
2. Apply ratios, rates and proportions to solve problems
3. Estimate, measure and calculate measurement for work
4. Use detailed maps to plan travel routes for work
5. Use geometry to draw and construct 2D and 3D shapes for work
6. Collect, organize and interpret statistical data
7. Use routine formula and algebraic expressions for work
8. Use common functions of a scientific calculator

**Learning Outcomes, Content and Methods of assessment**

| **Learning Outcome** | **Content** | **Methods of assessment**  |
| --- | --- | --- |
| 1. Apply a wide range of mathematical calculations for work
 | * Fundamentals of mathematics
* Addition, subtraction, multiplication and division of positive and negative numbers
* Algebraic expressions manipulation
* Forms of fractions, decimals and percentages
* Expression of numbers as powers and roots
 | * Written tests
* Assignments
* Supervised exercises
 |
| 1. Apply ratios, rates and proportions to solve problems
 | * Rates, ratios and proportions
* Meaning
* Conversions into percentages
* Direct and inverse proportions determination
* Performing calculations
* Construction of graphs, charts and tables
* Recording of information
 | * Written tests
* Assignments
* Supervised exercises
 |
| 1. Estimate, measure and calculate measurement for work
 | * Units of measurements and their symbols
* Identification and selection of measuring equipment
* Conversion of units of measurement
* Perimeters of regular figures
* Areas of regular figures
* Volumes of regular figures
* Carrying out measurements
* Recording of information
 | * Assignments
* Supervised exercises
* Written tests
 |
| 1. Use detailed maps to plan travel routes for work
 | * Identification of features in routine maps and plans
* Symbols and keys used in routine maps and plans
* Identification and interpretation of orientation of map to North
* Demonstrate understanding of direction and location
* Apply simple scale to estimate length of objects, or distance to location or object
* Give and receive directions using both formal and informal language
* Planning of routes
* Calculation of distance, speed and time
 | * Written
* Practical test
 |
| 1. Use geometry to draw and construct 2D and 3D shapes for work
 | * Identify two dimensional shapes and routine three dimensional shapes in everyday objects and in different orientations
* Explain the use and application of shapes
* Use formal and informal mathematical language and symbols to describe and compare the features of two dimensional shapes and routine three dimensional shapes
* Identify common angles
* Estimate common angles in everyday objects
* Evaluation of unknown angles
* Use formal and informal mathematical language to describe and compare common angles
* Symmetry and similarity
* Use common geometric instruments to draw two dimensional shapes
* Construct routine three dimensional objects from given nets
 |  |
| 1. Collect, organize and interpret statistical data
 | * + Classification of data
* Grouped data
* Ungrouped data
	+ Data collection
* Observation
* Recording
	+ Distinguishing between sampling and census
	+ Importance of sampling
	+ Errors in sampling
	+ Types of sampling and their limitations e.g.
* Stratified random
* Cluster
* Judgmental
	+ Tabulation of data
* Class intervals
* Class boundaries
* Frequency tables
* Cumulative frequency
	+ Diagrammatic and graphical presentation of data e.g.
* Histograms
* Frequency polygons
* Bar charts
* Pie charts
* Cumulative frequency curves
* Interpretation of data
 | * Assignments
* Supervised exercises
* Written tests
 |
| 1. Use routine formula and algebraic expressions for work
 | * + Solving linear equations
	+ Linear graphs
* Plotting
* Interpretation
* Applications of linear graphs
* Curves of first and second degree
* Plotting
* Interpretation
 | * Assignments
* Supervised exercises
* Written tests
 |
| 8. Use common functions of a scientific calculator | * Identify and use keys for common functions on a calculator
* Calculate using whole numbers, money and routine decimals and percentages
* Calculate with routine fractions and percentages
* Apply order of operations to solve multi-step calculations
* Interpret display and record result
 | * Written
* Practical test
 |

**Suggested Methods of Instruction**

* Group discussions
* Demonstration by trainer
* Practical work by trainee
* Exercises

**Recommended Resources**

* Calculators
* Rulers, pencils, erasers
* Charts with presentations of data
* Graph books
* Dice

# DIGITAL LITERACY

**UNIT CODE: DA/CU/FM/BC/03/6/B**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Digital Literacy

**Duration of Unit:** 60 hours

**Unit Description**

This unit describes competencies required to demonstrate digital literacy. It involves in identifying computer software and hardware, applying security measures to data, hardware, software in automated environment, computer software in solving task, internet and email in communication at workplace, desktop publishing in official assignments and preparing presentation packages.

**Summary of Learning Outcomes**

1. Identify computer software and hardware
2. Apply security measures to data, hardware, software in automated environment
3. Apply computer software in solving tasks
4. Apply internet and email in communication at workplace
5. Apply desktop publishing in official assignments
6. Prepare presentation packages

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Identify computer hardware and software
 | * Concepts of ICT
* Functions of ICT
* History of computers
* Components of a computer
* Classification of computers
 | * Written tests
* Oral presentation
 |
| 1. Apply security measures to data, hardware, software in automated environment
 | * Data security and control
* Security threats and control measures
* Types of computer crimes
* Detection and protection against computer crimes
* Laws governing protection of ICT
 | * Written tests
* Oral presentation
* Project
 |
| 1. Apply computer software in solving tasks
 | * Operating system
* Word processing
* Spread sheets
* Data base design and manipulation
* Data manipulation, storage and retrieval
 | * Oral questioning
* Project
 |
| 1. Apply internet and email in communication at workplace
 | * Computer networks
* Network configurations
* Uses of internet
* Electronic mail (e-mail) concept
 | * Oral questioning
* Written report
 |
| 1. Apply desktop publishing in official assignments
 | * Concept of desktop publishing
* Opening publication window
* Identifying different tools and tool bars
* Determining page layout
* Opening, saving and closing files
* Drawing various shapes using DTP
* Using colour pellets to enhance a document
* Inserting text frames
* Importing and exporting text
* Object linking and embedding
* Designing of various publications
* Printing of various publications
 | * Oral questioning
* Written report
* Project
 |
| 1. Prepare presentation packages
 | * Types of presentation packages
* Procedure of creating slides
* Formatting slides
* Presentation of slides
* Procedure for editing objects
 | * Oral questioning
* Written report
* Project
 |

**Suggested Methods of Instruction**

* Instructor led facilitation of theory
* Demonstration by trainer
* Practical work by trainee
* Viewing of related videos
* Project
* Group discussions

**Recommended Resources**

* Computers
* Printers
* Storage devices
* Internet access

# ENTREPRENEURIAL SKILLS

**UNIT CODE:** DA/CU/FM/BC/04/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Entrepreneurial Skills

**Duration of unit:** 100 hours

**Unit Description**

This unit covers the competencies required to demonstrate understanding of entrepreneurship. It involves demonstrating understanding of an entrepreneur, entrepreneurship and self-employment. It also involves identifying entrepreneurship opportunities, creating entrepreneurial awareness, applying entrepreneurial motivation and developing business innovative strategies.

**Summary of Learning Outcomes**

* 1. Demonstrate understanding of who an entrepreneur
	2. Demonstrate knowledge of entrepreneurship and self-employment
	3. Identify entrepreneurship opportunities
	4. Create entrepreneurial awareness
	5. Apply entrepreneurial motivation
	6. Develop business innovative strategies
	7. Develop Business plan

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Demonstrate knowledge of entrepreneurship and self-employment
 | * Importance of self-employment
* Requirements for entry into self-employment
* Role of an Entrepreneur in business
* Contributions of Entrepreneurs to National development
* Entrepreneurship culture in Kenya
* Born or made entrepreneurs
 | * Individual/group assignments
* Projects
* Written tests
* Oral questions
* Third party report
 |
| 1. Identify entrepreneurship opportunities
 | * Business ideas and opportunities
* Sources of business ideas
* Business life cycle
* Legal aspects of business
* Assessment of product demand
* Business environment
* Factors to consider when evaluating business environment
* Technology in business
 | * Individual/group assignments
* Projects
* Written tests
* Oral questions
* Third party report
* Interviews
 |
| 1. Create entrepreneurial awareness
 | * Forms of businesses
* Sources of business finance
* Factors in selecting source of business finance
* Governing policies on Small Scale Enterprises (SSEs)
* Problems of starting and operating SSEs
 | * Individual/group assignments
* Projects
* Written tests
* Oral questions
* Third party report
* Interviews
 |
| 1. Apply entrepreneurial motivation
 | * Internal and external motivation
* Motivational theories
* Self-assessment
* Entrepreneurial orientation
* Effective communications in entrepreneurship
* Principles of communication
* Entrepreneurial motivation
 | * Case studies
* Individual/group assignments
* Projects
* Written tests
* Oral questions
* Third party report
* Interviews
 |
| 1. Develop business innovative strategies
 | * Innovation in business
* Small business Strategic Plan
* Creativity in business development
* Linkages with other entrepreneurs
* ICT in business growth and development
 | * Case studies
* Individual/group assignments
* Projects
* Written tests
* Oral questions
* Third party report
* Interviews
 |
| 1. Develop Business Plan
 | * Business description
* Marketing plan
* Organizational/Management
* plan
* Production/operation plan
* Financial plan
* Executive summary
* Presentation of Business Plan
 | * Case studies
* Individual/group assignments
* Projects
* Written tests
* Oral questions
* Third party report
* Interviews
 |

**Suggested Methods of Instruction**

* Direct instruction
* Project
* Case studies
* Field trips
* Discussions
* Demonstration
* Question and answer
* Problem solving
* Experiential
* Team training

**Recommended Resources**

* Case studies
* Business plan templates
* Computers
* Overhead projectors
* Internet
* Mobile phone
* Video clips
* Films
* Newspapers and Handouts
* Business Journals
* Writing materials

# EMPLOYABILITY SKILLS

**UNIT CODE:** …./CU/../BC/05/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Employability Skills

**Duration of Unit:** 80 hours

**Unit Description**

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating interpersonal communication, critical safe work habits, leading a workplace team, planning and organizing work, maintaining professional growth and development, demonstrating workplace learning, problem solving skills and managing ethical performance.

**Summary of Learning Outcomes**

1. Conduct self-management
2. Demonstrate interpersonal communication
3. Demonstrate critical safe work habits
4. Lead a workplace team
5. Plan and organize work
6. Maintain professional growth and development
7. Demonstrate workplace learning
8. Demonstrate problem solving skills
9. Manage ethical performance

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Conduct self-management
 | * Self-awareness
* Formulating personal vision, mission and goals
* Strategies for overcoming life challenges
* Managing emotions
* Emotional intelligence
* Assertiveness versus aggressiveness
* Expressing personal thoughts, feelings and beliefs
* Developing and maintaining high self-esteem
* Developing and maintaining positive self-image
* Setting performance targets
* Monitoring and evaluating performance
* Articulating ideas and aspirations
* Accountability and responsibility
* Good work habits
* Self-awareness
* Values and beliefs
* Self-development
* Financial literacy
* Healthy lifestyle practices
* Adopting safety practices
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Demonstrate interpersonal communication
 | * Meaning of interpersonal communication
* Listening skills
* Types of audience
* Public speaking
* Writing skills
* Negotiation skills
* Reading skills
* Meaning of empathy
* Understanding customers’ needs
* Establishing communication networks
* Assertiveness
* Sharing information
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Demonstrate critical safe work habits
 | * Stress and stress management
* Time concept
* Punctuality and time consciousness
* Leisure
* Integratingpersonal objectives into organizational objectives
* Resources mobilization
* Resources utilization
* Setting work priorities
* Developing healthy relationships
* HIV and AIDS
* Drug and substance abuse
* Managing emerging issues
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Lead a workplace team
 | * Leadership qualities
* Power and authority
* Team building
* Determination of team roles and objectives
* Team parameters and relationships
* Individual responsibilities in a team
* Forms of communication
* Complementing team activities
* Gender and gender mainstreaming
* Human rights
* Developing healthy relationships
* Maintaining relationships
* Conflicts and conflict resolution
* Coaching and mentoring skills
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Plan and organize work
 | * Functions of management
* Planning
* Organizing
* Time management
* Decision making concept
* Task allocation
* Developing work plans
* Developing work goals/objectives and deliverables
* Monitoring work activities
* Evaluating work activities
* Resource mobilization
* Resource allocation
* Resource utilization
* Proactive planning
* Risk evaluation
* Problem solving
* Collecting, analysing and organising information
* Negotiation
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Maintain professional growth and development
 | * Avenues for professional growth
* Training and career opportunities
* Assessing training needs
* Mobilizing training resources
* Licenses and certifications for professional growth and development
* Pursuing personal and organizational goals
* Managing work priorities and commitments
* Recognizing career advancement
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Demonstrate workplace learning
 | * Managing own learning
* Mentoring
* Coaching
* Contributing to the learning community at the workplace
* Cultural aspects of work
* Networking
* Variety of learning context
* Application of learning
* Safe use of technology
* Taking initiative/proactivity
* Flexibility
* Identifying opportunities
* Generating new ideas
* Workplace innovation
* Performance improvement
* Managing emerging issues
* Future trends and concerns in learning
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Demonstrate problem solving skills
 | * Critical thinking process
* Data analysis tools
* Decision making
* Creative thinking
* Development of creative, innovative and practical solutions
* Independence in identifying and solving problems
* Solving problems in teams
* Application of problem-solving strategies
* Testing assumptions
* Resolving customer concerns
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |
| 1. Manage ethical performance
 | * Meaning of ethics
* Ethical perspectives
* Principles of ethics
* Ethical standards
* Organization code of ethics
* Common ethical dilemmas
* Organization culture
* Corruption, bribery and conflict of interest
* Privacy and data protection
* Diversity, harassment and mutual respect
* Financial responsibility/accountability
* Etiquette
* Personal and professional integrity
* Commitment to jurisdictional laws
* Emerging issues in ethics
 | * Written tests
* Oral questioning
* Interviewing
* Portfolio of evidence
* Third party report
 |

**Suggested Methods of Instruction**

1. Demonstrations
2. Simulation/Role play
3. Group Discussion
4. Presentations
5. Assignments
6. Q&A

**Recommended Resources**

* Computers
* Stationery
* Charts
* Video clips
* Audio tapes
* Radio sets
* TV sets
* LCD projectors

# ENVIRONMENTAL LITERACY

**UNIT CODE**:DA/CU/FM/BC/06/6/B

**Relationship to Occupational Standards**:

This unit addresses the Unit of Competency : Demonstrate Environmental Literacy

**Duration of Unit:** 40 hours

**Unit Description**

This unit describes the competencies required demonstrate environmental literacy.it involves controlling environmental hazard, controlling environmental pollution, complying with workplace sustainable resource use, evaluating current practices in relation to resource usage, identifying environmental legislations/conventions for environmental concerns, implementing specific environmental programs, monitoring activities on environmental protection/programs, analysing resource use and developing resource conservation plans.

**Summary of Learning Outcomes**

1. Control environmental hazard
2. Control environmental Pollution
3. Demonstrate sustainable resource use
4. Evaluate current practices in relation to resource usage
5. Identify Environmental legislations/conventions for environmental concerns
6. Implement specific environmental programs
7. Monitor activities on Environmental protection/Programs
8. Analyze resource use
9. Develop resource conservation plans

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** |  **Content** | **Methods of assessment**  |
| 1. Control environmental hazard
 | * Purposes and content of Environmental Management and Coordination Act 1999
* Storage methods for environmentally hazardous materials
* Disposal methods of hazardous wastes
* Types and uses of PPE in line with environmental regulations
* Occupational Safety and Health Standards (OSHS)
 | * Written questions
* Oral questions
 |
| 1. Control environmental Pollution control
 | * Types of pollution
* Environmental pollution control measures
* Types of solid wastes
* Procedures for solid waste management
* Different types of noise pollution
* Methods for minimizing noise pollution
 | * Written questions
* Oral questions
* Role play
 |
| 1. Demonstrate sustainable resource use
 | * Types of resources
* Techniques in measuring current usage of resources
* Calculating current usage of resources
* Methods for minimizing wastage
* Waste management procedures
* Principles of 3Rs (Reduce, Reuse, Recycle)
* Methods for economizing or reducing resource consumption
 | * Written questions
* Oral questions
* Role play
 |
| 1. Evaluate current practices in relation to resource usage
 | * Collection of information on environmental and resource efficiency systems and procedures,
* Measurement and recording of current resource usage
* Analysis and recording of current purchasing strategies.
* Analysis of current work processes to access information and data
* Identification of areas for improvement
 | * Written questions
* Oral questions
* Role play
 |
| 1. Identify Environmental legislations/conventions for environmental concerns
 | * Environmental issues/concerns
* Environmental legislations /conventions and local ordinances
* Industrial standard /environmental practices
* International Environmental Protocols (Montreal, Kyoto)
* Features of an environmental strategy
 | * Written questions
* Oral questions
 |
| 1. Implement specific environmental programs
 | * Community needs and expectations
* Resource availability
* 5s of good housekeeping
* Identification of programs/Activities
* Setting of individual roles /responsibilities
* Resolving problems /constraints encountered
* Consultation with stakeholders
 | * Written questions
* Oral questions
* Role play
 |
| 1. Monitor activities on Environmental protection/Programs
 | * Periodic monitoring and Evaluation of activities
* Gathering feedback from stakeholders
* Analyzing data gathered
* Documentation of recommendations and submission
* Setting of management support systems to sustain and enhance the program
* Monitoring and reporting of environmental incidents to concerned /proper authorities
 | * Oral questions
* Written tests
* Practical test
 |
| 1. Analyze resource use
 | * Identification of resource consuming processes
* Determination of quantity and nature of resource consumed
* Analysis of resource flow through different parts of the process.
* Classification of wastes for possible source of resources.
 | * Written tests
* Oral questions
* Practical test
 |
| 1. Develop resource Conservation plans
 | * Determination of efficiency of use/conversion of resources
* Causes of low efficiency of use of resources
* Plans for increasing the efficiency of resource use
 | * Written tests
* Oral questions
* Practical test
 |

**Suggested Methods of Instruction**

* Instructor led facilitation of theory
* Practical demonstration of tasks by trainer
* Practice by trainees
* Observations and comments and corrections by trainers

**Recommended Resources**

* Standard operating and/or other workplace procedures manuals
* Specific job procedures manuals
* Environmental Management and Coordination Act 1999
* Machine/equipment manufacturer’s specifications and instructions
* Personal Protective Equipment (PPE)
* ISO standards
* Company environmental management systems (EMS)
* Montreal Protocol
* Kyoto Protocol

# OCCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE:** …/CU/…/BC/07/6/B

**Relationship to Occupational Standards**

This unit addresses the unit of competency: Demonstrate Occupational Safety and Health Practices

**Duration of Unit:** 40 hours

**Unit Description**

This unit specifies the competencies required to demonstrate occupational health and safety practices. It involves identifying workplace hazards and risk, identifying and implementing appropriate control measures to hazards and risks and implementing OSH programs, procedures and policies/guidelines.

**Summary of Learning Outcomes**

1. Identify workplace hazards and risk
2. Control OSH hazards
3. Implement OSH programs

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Identify workplace hazards and risks
 | * Identification of hazards in the workplace and/or the indicators of their presence
* Evaluation and/or work environment measurements of OSH hazards/risk existing in the workplace
* Gathering of OSH issues and/or concerns
 | * Oral questions
* Written tests
* Portfolio of evidence
* Third party report
 |
| 1. Control OSH hazards
 | * Prevention and control measures e.g. use of PPE
* Risk assessment
* Contingency measures
 | * Oral questions
* Written tests
* Portfolio of evidence
* Third party report
 |
| 1. Implement OSH

 programs | * Company OSH program, evaluation and review
* Implementation of OSH programs
* Training of team members and advice on OSH standards and procedures
* Implementation of procedures for maintaining OSH-related records
 | * Oral questions
* Written tests
* Portfolio of evidence
* Third party report
 |

**Suggested Methods of instruction**

* Assigments
* Discussion
* Q&A
* Role play
* Viewing of related videos

**Recommended Resources**

* Standard operating and/or other workplace procedures manuals
* Specific job procedures manuals
* Machine/equipment manufacturer’s specifications and instructions
* Personal Protective Equipment (PPE) e.g.
* Mask
* Face mask/shield
* Safety boots
* Safety harness
* Arm/Hand guard, gloves
* Eye protection (goggles, shield)
* Hearing protection (ear muffs, ear plugs)
* Hair Net/cap/bonnet
* Hard hat
* Face protection (mask, shield)
* Apron/Gown/coverall/jump suit
* Anti-static suits
* High-visibility reflective vest

# CORE UNITS OF LEARNING

# DAIRY FARM LAYOUT

**UNIT CODE:** DA/CU/FM/CR/01/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Layout Dairy Farm

**Duration of Unit:** 70 hours

**Unit Description**

This unit specifies the competencies required to layout a dairy farm. It involves selecting dairy enterprises, mapping them out, apportioning the farm, fencing off and documenting dairy farm layout plan.

**Summary of Learning Outcomes**

1. Prepare to layout dairy farm
2. Layout dairy farm plan
3. Evaluate dairy farm layout
4. Complete dairy farm plan layout

**Learning Outcomes, Content and Methods of assessment**

| **Learning Outcome** | **Content** | **Methods of assessment**  |
| --- | --- | --- |
| 1. Prepare to layout dairy farm
 | * Types of dairy enterprises
* Agro Ecological Zones (AEZ)
* Market analysis
* Gross margin analysis
* Stocking rates
* Farm layout factors
	+ Topography
	+ Climate
	+ Farm access
	+ Soil conditions
	+ Water supply
	+ Electricity
* Dairy production systems
* Labour laws
* Types of labour
	+ Skilled
	+ Semi-skilled
	+ Unskilled
* Procurement procedures
* Occupational safety and health act and precautions
* Environmental management regulations
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Layout dairy farm plan
 | * Methods of bush clearing
* Area measurement
* Drawing and design
* Layout sketching
* Type of fences
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Evaluate dairy farm layout
 | * Taking down clients’ specifications
* Confirming area
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Complete dairy farm plan layout
 | * Record keeping
* Documentation
* Waste management
* Waste disposal

. | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |

**Suggested Methods of Instruction**

* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

| Functional dairy farm with the following: |
| --- |
| * Measuring tape
* Stationery
* Maps
* Tractors
* Trailer
* Slashers
* Crowbar
* Hammer
 | * Nails
* Saw
* Barbed/chain link
* Poles
* Stones
* Sand
* Cement
 | * Ballast
* Metal bars
* Land
* Live fence planting materials
* Hoe
* Stationery
 |

# DAIRY FARM STRUCTURES DEVELOPMENT

**UNIT CODE:** DA/CU/FM/CR/02/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Develop Dairy Farm Structures

**Duration of Unit:** 130 hours

**Unit Description**

This unit specifies the competencies required to develop dairy Farm Structures. It involves determining structures to construct, designing, siting, sourcing of construction materials, constructing and maintaining dairy farm structures.

**Summary of Learning Outcomes**

1. Prepare to construct farm structures
2. Construct farm structures
3. Evaluate farm structures construction
4. Complete farm structures construction

**Learning Outcomes, Content and Methods of assessment**

| **Learning Outcome** | **Content** | **Methods of assessment**  |
| --- | --- | --- |
| 1. Prepare to construct dairy farm structure
 | * Types of farm structures
	+ Milking parlour
	+ Cattle sheds
	+ Zero grazing unit
	+ Calf pens
	+ Hay barn
	+ Silos
	+ Holding crush
	+ Spray race
	+ Plunge dip
	+ Stores
	+ Watering troughs
	+ Feeding troughs
	+ Fences
* Structure designs
	+ Technical drawing
* Types of dairy enterprises
* Dairy production systems
	+ Intensive
	+ Semi-intensive
	+ Extensive/free range
* Factors considered in siting farm structure
* Factors considered in selection of tools &equipment
* Factors considered in selection of construction material & supplies
* Sources of construction materials
* Procurement procedures
* Labour laws
* Human resource management
* Occupational Safety and Health standards.
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 2. Construct dairy farm structure | * Area measurement
* Methods of bush clearing
* Drawing and design
* Structure siting
* Mixing ratios of mortar
* Stone laying
* Barbed wire/chain link laying
* Pole fixing
* Types of roofs
* Components of dairy farm structures
 | * Observation
* Written tests
* Oral questions

Interviewing |
| 1. Evaluate dairy farm structure constructed
 | * + Structure inspection
	+ Dairy machine operations
	+ Dairy farm structure strength tests
	+ Maintenance of dairy farm structures
	+ Customer care
 | * Observation
* Written tests
* Oral questions

Interviewing |
| 1. Complete dairy farm structure construction
 | * + Documentation
	+ Farm records
	+ Type of materials
	+ Manage waste
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Tractors
* Trailer
* Slashers
* Crowbar
* Hammer
* Nails
 | * Saw
* Metal bars Poles
* Stones
* Sand
* Cement
* Ballast
 | * Tape measures
* Barbed/chain link
* Land Live fence planting materials
* Hoe
 |

# DAIRY FORAGE PRODUCTION

**UNIT CODE:** DA/CU/FM/CR/03/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Produce Dairy Forage

**Duration of Unit:** 200 hours

**Unit Description**

This unit specifies the competencies required to produce dairy forage. It involves land preparation, establishment, forage management practices, harvesting and conservation.

**Summary of Learning Outcomes**

1. Prepare to produce dairy forage
2. Produce Dairy Forage
3. Evaluate Forage produced
4. Complete Dairy Forage production

**Learning Outcomes, Content and Methods of assessment**

| **Learning Outcome** | **Content** | **Methods of assessment**  |
| --- | --- | --- |
| 1. Prepare to produce dairy forage
 | * Agro Ecological zonation
	+ Zone mapping
	+ Matching forage to zones
* Determination of Market Demands
* Farm planning
* Soil conservation
* Methods of land preparation
* Soil sampling
* Planting materials
	+ Types
	+ Sources
	+ Preparation
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Produce Dairy Forage
 | * Forage types
	+ Pasture
	+ Fodder crops
	+ Multi-purpose trees
* Forage planting methods
* Seed rates
* Gapping
* Pest, weed and disease control
	+ Types
	+ Control methods
* Fertilizer application
	+ Types of fertilizer
	+ Application rates and methods
	+ Time
* Irrigation methods
	+ Overhead
	+ Furrow / canal
	+ Drip
* Forage harvesting
	+ Stage
	+ Methods
 | * Observation
* Written tests
* Oral questions
* Product analysis
* Interviewing
 |
| 1. Evaluate forage produced
 | * Forage judging
* Forage quantity forecasting
* Returns on investment calculations
 | * Observation
* Written tests
* Oral questions
* Product analysis
* Interviewing
 |
| 1. Complete Dairy Forage production
 | * Forage conservation methods
	+ Hay making
	+ Silage making
* Forage storage
* Mange waste
* Documentation
	+ Reports
	+ Records
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Tractors
* Land
* Trailer
* Ploughs
* Harrows
* Tillers
* Sprayers
* Rakes
* Tedders
 | * Mowers
* Forage choppers / chaff cutters
* Balers
* Forage harvesters
* Hammer mills
* Molasses
* Silage silos
* Forage planting materials
 | * Hay barn
* Farm tools (Hoe, fork, rake, panga, shovel and watering cans)
* Polythene sheets and tubes
* Baling twines
* Forage box
 |

# DAIRY FEED FORMULATION

**UNIT CODE:** DA/CU/FM/CR/04/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Formulate dairy feed

**Duration of Unit:** 250 hours

**Unit Description**

This unit specifies the competencies required to formulate dairy feed. It involves determining feed ingredients to use; assessing ingredient quality; computing feed rations; processing and mixing ingredients; assessing ration quality; and packaging and storage.

**Summary of Learning Outcomes**

1. Prepare to formulate dairy feed
2. Formulate dairy feed
3. Evaluate feed formulation
4. Complete feed formulation

**Learning Outcomes, Content and Methods of assessment**

| **Learning Outcome** | **Content** | **Methods of assessment**  |
| --- | --- | --- |
| 1. Prepare to formulate dairy feed
 | * Dairy species
* Grouping of dairy animals
	+ Calves and kids
	+ Heifers and doelings
	+ Lactating animals (early, mid and late lactation)
	+ Dry animals
	+ Bulls, bucks, steers and wethers
* Feedstuff sampling
* Ration package labelling
* Human resource management
	+ Staff recruitment
	+ Motivation
* Labour laws
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 2. Formulate dairy feed  | * Types and sources of nutrients
* Feeds and feedstuff classes
* Types of costs
* Nutritional content of feedstuff
* Animal feed manufacturing requirements
* Nutritional requirements of different species and classes of dairy animals
* Feed formulation methods
	+ Pearson square
	+ Step by step
	+ Trial and error
	+ Computer simulation
* Forms of feed presentation
* Feed processing methods
* Feed mixing methods
	+ Manual
	+ Mechanical
* Feed mixers
	+ Vertical
	+ Horizontal
	+ Transverse
* Packaging
* Feed storage
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Evaluate feed formulation
 | * Feed analysis methods
	+ Chemical
	+ Physical
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Complete feed formulation
 | * Good manufacturing practices
* Types of feeding documents
	+ Reports
	+ Records
* Dairy feeding waste disposal management
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Tractors
* Trailer
* Chopping implements
* Hammer mills
* Grinding mills
* Feed mixers
* Feedstuff
* Detergents
* Fumigants
 | * Water
* Packaging material
* Labels
* Feed stores
* Stationery
* Weighing balances
* Calculators
* Pest control equipment and materials
 | * Pelleting machines
* Sampling kits
* Feedstuff nutrient content tables
* Gunny bags
* Twines
* PPEs
* Livestock production manual
 |

# DAIRY ANIMALS BREEDING

**UNIT CODE:** DA/CU/FM/CR/05/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Breed dairy animals

**Duration of Unit:** 140 hours

**Unit Description**

This unit specifies the competencies required to breed dairy animals. It involves dairy animal selection, identification, registration and reproductive management

**Summary of Learning Outcomes**

1. Prepare to breed dairy animals
2. Breed dairy animals
3. Evaluate dairy breeding
4. Complete dairy animal breeding

**Learning Outcomes, Content and Methods of assessment**

| **Learning Outcome** | **Content** | **Methods of assessment**  |
| --- | --- | --- |
| 1. Prepare to breed dairy animals
 | * Dairy animals’ breeds
* Selection methods
	+ Tandem
	+ Independent culling
	+ Selection index
* Traits of economic importance
* Selection aids
* Breeding management tools, equipment, materials and supplies
* Identification methods
	+ Ear tagging
	+ Ear notching
	+ Tattooing
	+ Branding
	+ Electronic transponders
* Animal welfare
* Culling criteria
* Occupational safety and health standards
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 2. Breed dairy animals  | * Oestrus cycle
* Heat detection
* Mating systems
	+ Natural
	+ Artificial Insemination
	+ Embryo transfer
* Gestation
* Pregnancy diagnosis
* Parturition process
* Dystocia management
* Steaming up
* Breeding systems
	+ Pure breeding
	+ Cross breeding
	+ Line breeding
* Inbreeding depression
* Human resource management
	+ Staff recruitment
	+ Motivation
* Labour laws
* Occupational safety and health standards
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Evaluate dairy breeding
 | * Breeding values
* Genetic gain
* Upgrading
* Dairy animal registration procedures
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Complete dairy animal breeding
 | * Communication
	+ Types of breeding documents (Records and reports)
	+ Inter-personal
* Waste management
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Sire catalogues
* AI kit / services
* Embryo transfer services
* PPEs
* Weighing bands
* Identification equipment and materials
 | * Breeding males
* Feed rations
* Holding crush
* Breeding records
* Stationery
* PPEs
* Maternity pens
* Navel clips
 | * Water
* Weighing band
* Breeding calendar
* Disinfectants
* Livestock Production Manual
* Ropes
* Obstretical lubricants
 |

# DAIRY ANIMALS FEEDING

**UNIT CODE:** DA/CU/FM/CR/06/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Feed dairy animals

**Duration of Unit:** 270 hours

**Unit Description**

This unit specifies the competencies required to feed dairy animals. It involves selecting suitable dairy production system, grouping animals into classes, mixing the ration, applying the right feeding system and documentation of feeding.

**Summary of Learning Outcomes**

1. Prepare to feed dairy animals
2. Feed dairy animals
3. Evaluate dairy feeding
4. Complete dairy animal feeding

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Prepare to feed dairy animals
 | * Agro Ecological zonation
	+ Zone mapping
	+ Matching forage to zones
* Dairy production systems
	+ Intensive
	+ Extensive
	+ Semi-intensive
* Grouping of dairy animals
	+ Calves and kids
	+ Heifers and doelings
	+ Lactating animals (early, mid and late lactation)
	+ Dry animals
	+ Bulls, bucks, steers and wethers
* Human resource management
	+ Staff recruitment
	+ Motivation
* Labour laws
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 2. Feed dairy animals  | * Types and sources of nutrients
* Feeds and feedstuff classes
* Nutritional requirements of different species and classes of dairy animals
* Lactation curve
* Feeding systems
	+ Separate concentrate feeding
	+ Total mixed rations
	+ Partly mixed rations
* Feeding strategies
	+ Ad libitum feeding
	+ Restricted concentrate feeding
	+ Flat rate feeding
* Feed mixing methods
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 3.Evaluate dairy feeding  | * Feed intake
* Feed conversion efficiency
* Feeding regimes
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 4.Complete dairy animal feeding | * Feeding structures and equipment hygiene
* Types of feeding documents
	+ Reports
	+ Records
* Dairy feeding waste disposal management
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Tractors
* Trailer
* Chopping implements
* Feed mixers
* Feed troughs
* Water troughs
 | * Pasture paddocks
* Water
* Feed rations
* Hay barn
* Silage silos
* Wheelbarrows
 | * Feeding stalls
* PPEs Weighing balances and bands
* Calculators
* Livestock production manual
 |

#  DAIRY ANIMALS MILKING

**UNIT CODE:** DA/CU/FM/CR/07/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Milk dairy animals

**Duration of Unit:** 80 hours

**Unit Description**

This unit specifies the competencies required to milk dairy animals. It involves pre-milking preparations; actual milking; post milking activities; and documentation of milk production.

**Summary of Learning Outcomes**

1. Prepare to milk dairy animals
2. Milk dairy animals
3. Evaluate dairy animal milking
4. Complete dairy animal milking

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Prepare to milk dairy animals | * Steaming up
* Milk synthesis
* Milk let down process
* Human resource management
	+ Staff recruitment
	+ Motivation
* Labour laws
* Occupational safety and health standards
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 2. Milk dairy animals | * Hygienic milk production
* Mastitis
	+ Detection
	+ Management
* Milking methods, techniques and routine
	+ Hand milking
	+ Machine milking
* Milk storage
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Evaluate dairy animal milking
 | * Hygiene monitoring
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Complete dairy animal milking
 | * Milking parlour and equipment cleaning methods and procedures
* Communication
	+ Types of breeding documents (Records and reports)
	+ Inter-personal
* Waste management
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Milking parlour
* Milking buckets
* Milk holding cans and cooling tanks
* Strip cup
* Carlifonia Mastitis Test (CMT) kit
* Udder cloth
 | * Teat dip
* Disinfectants
* Detergents
* Hand brooms, brushes and scrubbers
* Water
* Restraining ropes / chains
* Weighing balances
 | * Sieves
* Waste management equipment and material Stationery
* Milk record sheets / books
* PPEs
* Livestock Production Manual
 |

#  DAIRY YOUNG STOCK MANAGEMENT

**UNIT CODE:** DA/CU/FM/CR/08/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Manage Dairy Young Stock

**Duration of Unit:** 200 hours

**Unit Description**

This unit specifies the competencies required to manage dairy young stock. It involves steaming up, parturition handling, feeding, identification, housing, weaning and routine management activities for young stock.

**Summary of Learning Outcomes**

1. Prepare to manage dairy young stock
2. Manage dairy young stock
3. Evaluate dairy young stock management
4. Complete dairy young stock management

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Prepare to manage dairy young stock
 | * Steaming up
* Parturition signs and process
* Dystocia management
* Human resource management
	+ Staff recruitment
	+ Motivation
* Labour laws
* Occupational safety and health standards
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Manage dairy young stock
 | * Neonate handling
* Immunology
* Gross anatomy and basic physiology
* Nutritional requirements
* Rumen development
* Feeding regimes
* Identification methods
	+ Ear tagging
	+ Ear notching
	+ Tattooing
	+ Branding
	+ Electronic transponders
* Young stock housing
* Debudding methods
	+ Hot iron
	+ Chemical (caustic soda)
* Removal of extra mammary glands
* Culling criteria
* Weaning criteria and process
* Animal welfare
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Evaluate dairy young stock management
 | * Growth rate monitoring
* Dairy animal registration procedures
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Complete dairy young stock management
 | * Communication
	+ Types of breeding documents (Records and reports)
	+ Inter-personal
* Waste management
* Documentation
* Report writing
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Maternity pens
* Ropes
* Obstretical lubricants
* Disinfectants
* Navel clips
* Housing pens
* Feeding bottles and buckets
* Claening materials and equipment
* Weighing bands
 | * Identification equipment and materials
* Feed rations
* Holding crush
* Hay barns, silos and feed stores
* Feeding stalls
* Feeding and watering troughs
* Waste management equipment and material
 | * Teat clippers
* Breeding records
* Stationery
* Water
* Disbudding tools and materials
* Castration tools and equipment
* PPEs
* Livestock Production Manual
 |

#  DAIRY HERD HEALTH MANAGEMENT

**UNIT CODE:** DA/CU/FM/CR/09/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Manage Dairy Herd health

**Duration of Unit:** 210 hours

**Unit Description**

This unit specifies the competencies required to manage dairy herd health. It involves farm biosecurity, parasite control, vaccination, disease control and animal grooming.

**Summary of Learning Outcomes**

1. Prepare to manage dairy herd health
2. Manage dairy herd health
3. Evaluate dairy herd health management
4. Complete dairy herd health management

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Prepare to manage dairy herd health
 | * Biosecurity
	+ Measures
	+ Regulatory bodies
* Human resource management
	+ Staff recruitment
	+ Motivation
* Labour laws
* Occupational safety and health standards
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Manage dairy herd health
 | * Gross anatomy and basic physiology
* Animal handling
* Common dairy animal diseases
	+ Types
	+ Causes
	+ Symptoms
	+ Prevention and control measures
* Types of parasites
	+ External
	+ Internal
* Parasites control methods
	+ Chemical
	+ Biological
	+ Integrated
* Immunology
* Vaccination schedules
* Hoof care
* Disbudding methods
	+ Hot iron
	+ Chemical (caustic soda)
* Dehorning procedures
	+ Dehorning wire
	+ Dehorning saw
	+ Cauterization
* Grooming
* Animal welfare
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Evaluate dairy herd health management
 | * Parasite and disease resistance
 | * Observation
* Written tests
* Oral questions
* Interviewing
* Third party report
 |
| 1. Complete dairy herd health management
 | * Communication
	+ Types of breeding documents (Records and reports)
	+ Inter-personal
* Waste management
 | * Observation
* Written tests
* Oral questions
* Interviewing
 |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Holding crush
* Ropes
* Disinfectants
* Navel clips
* Scapels
* Cleaning materials and equipment
* Weighing bands
* Hoof triming tools, equipment and structures
 | * Dewormers
* Drenching and bolus guns
* Acaricides
* Plunge dip and spray race
* Spayers
* Vaccines
* Waste management equipment and material
* Grooming tools and equipment
 | * Herd health records
* Stationery
* Water
* Disbudding and dehorning tools and materials
* PPEs
* Livestock Production Manual
 |

# DAIRY FARM BUSINESS MANAGEMENT

**UNIT CODE:** DA/CU/FM/CR/10/6/B

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Manage dairy farm business

**Duration of Unit:** 70 hours

**Unit Description**

This unit specifies the competencies required to manage a dairy farm business. It involves planning, controlling, coordinating, organizing, directing and documenting dairy farm business.

**Summary of Learning Outcomes**

1. Prepare to manage dairy farm business
2. Manage dairy farm business
3. Evaluate dairy farm business management
4. Complete dairy farm business management

**Learning Outcomes, Content and Methods of assessment**

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Methods of assessment**  |
| 1. Prepare to manage dairy farm business
 | * Strategic planning
* Implementation plans
* Work plans
* Budgets
* Cash flows
* Dairy enterprises
* Management information systems
* Labour laws
* Types of labour
	+ Skilled
	+ Semi-skilled
	+ Unskilled
* Procurement procedures
* Occupational safety and health precautions
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Manage dairy farm business
 | * Types of labour
* Types of labour
	+ Skilled
	+ Semi-skilled
	+ Unskilled
* Labour recruitment
* Management functions
	+ Planning
	+ Directing
	+ Controlling
	+ Coordinating
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Evaluate dairy farm business management
 | * Customer care
* Human resource motivation
 | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |
| 1. Complete dairy farm business management
 | * Record keeping
* Reporting and documentation

. | * Written tests
* Observation
* Oral questions
* Third party report
* Interviewing
 |

**Suggested Methods of Instruction**

* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction

**Recommended Resources**

|  |
| --- |
| Functional dairy farm with the following: |
| * Stationery
* Computer
* Internet
 |