****

**REPUBLIC OF KENYA**

**COMPETENCY BASED MODULAR CURRICULUM**

**FOR**

**PIG PRODUCTION**

**KNQF LEVEL 3**

**ISCED PROGRAMME CODE:** **08110354A**

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# **FOREWORD**

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

Reforms in the education sector are necessary to achieve Kenya Vision 2030 and meet the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution, and this resulted in the formulation of the Policy Framework for Reforming Education and Training in Kenya (Sessional Paper No. 14 of 2012). 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 the mode of delivery allow 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. For trainees to build their skills on foundational hands-on activities of the occupation, units of learning are grouped in modules. This has eliminated duplication of content and streamlined exemptions based on skills acquired as a trainee progresses in the up-skilling process, while at the same time allowing trainees to be employable in the shortest time possible through the acquisition of part qualifications.

It is my conviction that this curriculum will play a great role in developing competent human resources for the Agriculture Sector’s growth and development.

**PRINCIPAL SECRETARY**

**STATE DEPARTMENT FOR TVET**

**MINISTRY OF EDUCATION**

**PREFACE**

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

TVET Act, CAP 210A and Sessional Paper No. 1 of 2019 on Reforming Education and Training in Kenya for Sustainable Development emphasized the need to reform curriculum development, assessment, and certification. This called for a shift to CBET to address the mismatch between skills acquired through training and skills needed by industry, as well as increase the global competitiveness of the Kenyan labour force.

This curriculum has been developed in adherence to the Kenya National Qualifications Framework and CBETA standards and guidelines. The curriculum is designed and organized into Units of Learning with Learning Outcomes, suggested delivery methods, learning resources, and methods of assessing the trainee’s achievement. In addition, the units of learning have been grouped in modules to concretize the skills acquisition process and streamline upskilling.

I am grateful to all expert trainers and everyone who played a role in translating the Occupational Standards into this competency-based modular curriculum.

# **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 were received from expert trainers, institutions and organizations.

I recognize with appreciation the role of the Agriculture National Sector Skills Committee (NSSC) 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 everyone who participated in developing this curriculum.

I am convinced that this curriculum will go a long way in ensuring that individuals aspiring to work in the Agriculture Sector acquire competencies to perform their work more efficiently and effectively.

Contents

[ACKNOWLEDGMENT iv](#_Toc196826244)

[ABBREVIATIONS AND ACRONYMS vi](#_Toc196826245)

[KEY TO UNIT ISCED CODE vii](#_Toc196826246)

[COURSE OVERVIEW viii](#_Toc196826247)

[PIG UNIT CONSTRUCTION ２](#_Toc196826248)

[PIG STOCK PRODUCTION ６](#_Toc196826249)

[PIG FEEDS PRODUCTION １０](#_Toc196826250)

**ABBREVIATIONS AND ACRONYMS**

BC Basic Competency

CC Core Competency

CDACC Curriculum Development Assessment and Certification Council

CO Common Units

CU Curriculum

KCSE Kenya Certificate of Secondary Education

KNQA Kenya National Qualifications Authority

OSHA Occupation Safety and Health Act

PPE Personal Protective Equipment

SSAC Sector Skills Advisory Committee

TVET Technical and Vocational Education and Training

# **KEY TO UNIT ISCED CODE**



# **COURSE OVERVIEW**

The Pig production level three (3) qualification consists of competencies that a person must have to rear pigs. It involves constructing pig unit, producing pig stock and producing pig feeds.

The units of learning comprising pig production level 3 include the following core units:

**UNIT SUMMARY**

|  |  |  |  |
| --- | --- | --- | --- |
|  **ISCED Unit Code** | **Unit Title** | **Duration in Hours** | **Credit Factor**  |
| 0811251 01 A | Pig Unit Construction | 60 | 6 |
| 0811251 02 A | Pig Stock Production  | 120 | 12 |
| 0811251 03 A | Pig Feeds Production  | 120 | 12 |
| Industry Training  | 240 | 24 |
| **Total**  |  | **540** | **54** |

**Entry Requirements**

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

1. Kenya Certificate of Primary Education (KCPE),

or

1. Equivalent qualification as maybe determined by relevant regulatory body.

**Trainer Qualification**

A trainer for this course MUST:

1. Possession of at least a level 5 qualification in pig production or its equivalent.
2. Be licensed by TVETA.

**Industry Training**

It is envisioned that a trainee will undergo 240 hours industrial training and assessment within a recognized pig production industry as prerequisite for completion of this course. Industrial training maybe undertaken after completion of all units for those pursuing full qualification or be distributed equally in each unit for those pursuing part qualification. In case of dual training model industrial training shall be as guided by dual training policy.

**Assessment**

The course shall be assessed formatively and summatively:

1. During formative assessment all performance criteria shall be assessed based on performance criteria weighting.
2. Number of formative assessments shall minimally be equal to the number of elements in a unit of competency
3. Assessment of basic and common competencies shall be integrated in the core units
4. Theoretical assessment shall be integrated in practical assessment and conducted orally in both formative and summative assessments.
5. Theoretical and practical weight shall be 10:90 respectively for each unit of learning.
6. Formative and summative assessments shall be weighted at 60% and 40% respectively in the overall unit of learning score
7. Assessment performance rating for each unit of competency shall be as follows:

|  |  |
| --- | --- |
| **MARKS**  | **COMPETENCE RATING** |
| 80 -100 | Attained Mastery |
| 65 - 79 | Proficient |
| 50 - 64 | Competent |
| 49 and below | Not Yet Competent |
| Y | Assessment Malpractice/irregularities |

1. Assessment for Recognition of Prior Learning (RPL) may lead to award of part and/or full qualification.

**Certification**

An individual will be issued with a Certificate of Competency upon demonstration of competence in a unit of competency. To be issued with Kenya National TVET Certificate in Pig Production level 3, one must have demonstrated competence in all the units of competency as given in qualification pack. Statement of Attainment maybe awarded upon demonstration of competence in a certifiable element within a unit.

This qualification shall be awarded by Qualification Awarding Institution

# **PIG UNIT CONSTRUCTION**

**ISCED UNIT CODE:** 0811 251 01A

**Relationship to Occupational Standards**

This unit addresses the unit of competency: Construct Pig Unit

**Duration of Unit:** 60hours

**Unit Description**

This unit covers the competencies required to perform pig unit construction. It involves identifying and marking pig unit construction sites, gathering materials for pig unit construction, and performing pig unit construction activities. It also entails identifying areas of the pig unit requiring repair and maintenance from time to time.

**Summary of Learning Outcomes**

By the end of this unit, the learner should be able to:

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1.  | Identify and mark pig Unit construction site,  | 10 |
| 2.  | Gather pig unit construction materials for pig Unit construction  | 15 |
| 3. | Perform pig Unit construction activities.  | 20 |
| 4.  | Identify areas of the pig Unit requiring repair and maintenance  | 15 |
| **Total** | **60** |

**Learning Outcomes, Content, and Suggested Assessment Methods**

| **Learning Outcome** | **Content** | **Methods of assessment** |
| --- | --- | --- |
| 1. Identify and mark pig unit construction site
 | * 1. Meaning of pig unit
		1. Basic pig unit designs
		2. Site identification and marking of a pig unit
	2. Tools and equipment used in site preparation
	3. Personal protective equipment.
		1. Gloves
		2. Gumboots
		3. Protective glasses
		4. Face mask
		5. Overall
		6. Helmet
	4. Factors to consider when selecting a pig unit design
	5. Types of pig unit design
	6. Innovations in pig unit construction
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment

  |
| 1. Gather pig unit construction materials
 | * 1. Location of pig unit construction materials.
	2. Types of resources required for pig unit construction
	3. Documentation of delivered construction materials on site
	4. Storage of construction materials
 | * + Written Assessment
	+ Practical Assessment
	+ Third party report
	+ Oral Assessment
	+
 |
| 1. Participate in pig Unit construction activities
 | * 1. Monitoring and evaluation of pig unit construction project
	2. Procedures of construction materials issuance
	3. Documentation of construction materials issuance
	4. Monitoring of issued construction materials
	5. Preparation of completion report
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment
 |
| 1. Identify areas of pig unit requiring repair and maintenance
 | * 1. Resources for pig unit maintenance
	2. Labour supervision during pig unit construction.
	3. Characteristics of functional components of a pig unit
		1. Floor
		2. Drainage
		3. Heating and lighting systems
		4. Roofing
		5. Walls
		6. Feed and water facilities
	4. Pig unit maintenance requirements and resources
	5. Pig unit repair and maintenance regulations
	6. Performing repair and maintenance activities
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment
 |

**Suggested Methods of Instructions**

* Projects
* Demonstration by trainer
* Practice by the trainee
* Discussions
* Direct instruction
* Field Visit
* Videos

**Recommended Resources for 25 trainees**

|  |  |  |
| --- | --- | --- |
| Machinery  | Tools and equipment  | Materials and supplies  |
| * 2 Tractors
* 2 Trailer
 | * 10 Slashers
* 5 Wheelbarrow
* 10 Spade
* 10 rakes
* 2 Crowbar
* Assorted Hammer
* 2 projectors
* 5 hacksaws
* 5 Metal bars Poles
* Stones
* 10 Hoe
* 25 sets technical drawing sets
 | * 25 Tape measures
* I roll Barbed/chain link
* I roll of fencing materials
* 2 wheelbarrows of Sand
* 5 bags Cement
* 1 wheelbarrow Ballast
* Assorted pig sty drawings
* Assorted Nails
* I roll of sisal twine
 |

# **PIG STOCK PRODUCTION**

**ISCED UNIT CODE:** 0811 251 02A

**Relationship to Occupational Standards**

This unit addresses the unit of competency: producing pig stock

**Duration of Units:** 120 hours

**Unit Description**

This unit covers the competencies required to produce pig stock. It involves implementing a pig breeding program, carrying out routine pig stock management practices as well as herd health management and biosecurity practices.

**Summary of Learning Outcomes**

By the end of this unit, the learner should be able to:

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1.  | Implement a pig breeding programme | 30 |
| 2.  | Carry out routine pig stock management practices  | 60 |
| 3. | Carry out health management and bio-security practices | 30 |
| **Total** | **120** |

**Learning Outcomes, Content, and Suggested Assessment Methods**

| **Learning Outcome** | **Content** | **Methods of Assessment** |
| --- | --- | --- |
| 1. Implement a pig breeding program
 | * 1. Meaning of terms:
		1. breeds,
		2. breeding,
		3. breeding program,
		4. selection,
		5. litter,
		6. crossbreeding,
	2. Identification of breeds.
		1. Duroc
		2. Large white
		3. Land race
		4. Hampshire
		5. Camborough
	3. Pig breeding options
		1. Natural mating
		2. Artificial insemination.
	4. Pig breeding program
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment
 |
| 1. Carry out routine pig stock management practices
 | * 1. Meaning of terms:
		1. Generic,
		2. Non-generic,
		3. piglets,
		4. weaners,
		5. boar,
		6. gilt,
		7. runt,
		8. sow,
		9. rigs,
		10. porkers,
		11. baconers,
		12. farrowing,
		13. parity,
		14. barrow,
		15. in-pig,
		16. pig cycle,
		17. hereditary abnormalities
		18. farrowing
	2. Pig routine management practices records and record keeping
		1. Tooth creeping
		2. Branding
			1. Tattooing
			2. Notching
			3. Ear tagging.
		3. Castration
		4. Tail docking
		5. Spraying
		6. Cleaning
		7. Feeding.
	3. Pig handling
		1. Pig behaviour and vices
		2. Hog snare
		3. V shaped
		4. Use of a bucket.
		5. Chemical restraint.
	4. Record keeping
		1. Importance of records
		2. Types of records
			1. Breeding record
			2. Feeding records
			3. Health records
 | * + Written Assessment
	+ Practical Assessment
	+ Third party report
	+ Oral Assessment
 |
| 1. Carry out health management and bio-security practices
 | * 1. Meaning of terms;
		1. health,
		2. disease,
		3. vaccination,
		4. mortality,
		5. morbidity,
		6. quarantine,
		7. notifiable diseases,
		8. zoonosis
		9. Signs of healthy a pig
	2. Pig farm bio-security practices
		1. Controlled access
		2. Cleaning and disinfectant
		3. Waste management
		4. Feed and water management
		5. Monitoring animal health.
	3. Pig herd health management records
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment
 |

**Suggested Methods of instructions**

* Demonstration by trainer
* Practice by the trainee
* Discussions
* Direct instruction
* Outreach programme
* Field visit

**Recommended Resources for 25 trainees**

|  |  |  |
| --- | --- | --- |
| **Tools and Equipment**  | **Materials and supplies**  | **Structures**  |
| * Weighing equipment
* 5 Tooth clippers
* 5 Restrainers
* 5 knapsack Sprayers
* 10 Health kits
* 25 sets of PPEs
* Cleaning equipment; 5 brooms, 5 wheelbarrow, 25 buckets
* Assorted Identification equipment
* Heating equipment/system
* 5 Pregnancy kits
* Grooming equipment
* Waterer (ratio of 1 waterer to 10 pigs)
* feeders (ratio of 10 pigs to 1 feeder)
 | * Assorted Surgical blades
* Assorted Disinfectants
* Reliable water source
* Assorted Detergent
* Assorted Feeds
* 5 Samples pig production records
* Assorted Stationeries
 | * 1 Pig unit/sty
* Wallowing tank
* Roll Chains to prevent cannibalism
 |

# **PIG FEEDS PRODUCTION**

**ISCED UNIT CODE:** 0811 251 03 A

**Relationship to Occupational Standards**

This unit addresses the unit of competency: produce pig feeds

**Duration of Unit:**  120 hours

**Unit Description**

This unit covers the competencies required to produce pig feeds. It involves identifying and sourcing pig feed raw materials, identifying, selecting and applying pig feed production formulae and compounding and storing pig feed rations. It also entails marketing and selling pig feeds.

**Summary of Learning Outcomes**

By the end of this unit, the learner should be able to:

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1.  | Receive and store feed formulation raw materials  | 30 |
| 2.  | Compound feed ration  | 60 |
| 3. | Market and sell pig feeds | 30 |
| **Total** | **120** |

**Learning Outcomes, Content and Suggested Assessment Methods**

| **Learning Outcome** | **Content** | **Methods of Assessment** |
| --- | --- | --- |
| 1. Receive and store feed compounding raw materials
 | * 1. Types and quality of pig feed raw materials
	2. Feed compounding raw materials.
		1. Grains
		2. Oil seeds products
		3. Root crop products
		4. Legumes
		5. Grain products
		6. Animal products
		7. Vitamins
		8. Minerals
		9. Ashes
		10. water
		11. Premixes (mineral and vitamin)
		12. Amino acids
		13. Additives (microbial, enzymes, buffers, toxin binders, sweeteners)
	3. Develop stores inventory.
	4. Feed compounding resources.
1. Storage of pig feed raw materials
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment
 |
| 1. Compound feed ration
 | * 1. Workplace safety and regulations
	2. Tools and Equipment used in compounding feed rations and basic maintenance
	3. Methods of preparing pig feed ingredients
	4. Mixing pig feed ingredients
	5. Packaging, labelling and storage of compound feed ration.
	6. Work place waste management
	7. Documentation of pig feed formulation activities.
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment
 |
| 1. Marketing of pig feeds
 | * 1. Meaning of the terms
		1. Market
		2. Marketing
		3. Market Survey
	2. Methods of market survey
	3. Types of marketing channels
	4. Implement a marketing strategy
	5. Sale of pig feeds
	6. Documentation of marketing activities.
 | * Written Assessment
* Practical Assessment
* Third party report
* Oral Assessment
 |

**Suggested Methods of Delivery**

* Projects
* Demonstration by trainer
* Practice by the trainee
* Discussions
* Direct instruction
* Field visits

**Recommended Resources for 25 trainees**

|  |
| --- |
| Functional pig farm with the following: |
| * 2 Tractors
* 2 Trailer
* 2 Chopping implements
* 2 Hammer mills
* 2 Grinding mills
* 2 Feed mixers
* Assorted Feedstuff
* Detergents
* Assorted Fumigants
* 2 Sealing equipment
* 2 Labeling equipment
* 5 Shovel
* 5 Wheelbarrow
* Canvas
 | * Adlib tum Water
* Assorted Packaging material
* Assorted Labels
* Feed stores
* Assorted Stationery
* 5 Weighing equipment
* 25 Calculators
* 5 Computer
* 5 samples of accounting documents
* 5 samples of Store control documents
* Assorted Pest control equipment and materials
* 10 Brooms
* 10 Scrubbers
* 10 Mops
 | * 2 Pelleting machines
* Sampling kits
* 5 samples Feedstuff nutrient content tables
* Assorted Gunny bags
* 22 rolls of Twines
* 25 sets of PPEs
* Assorted Waste management equipment and material
* 5 samples of Livestock production manual
* 1 Source of power
 |