

**REPUBLIC OF KENYA**

**COMPETENCY-BASED MODULAR CURRICULUM**

**FOR**

**MEAT PRODUCT PROCESSING**

**KNQF LEVEL 4**

**PROGRAMME ISCED CODE; 0721 354A**

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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 Meat 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.

**CHAIRPERSON OF THE COUNCIL**

# 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 Meat 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 meat 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 meat Sector acquire competencies to perform their work more efficiently and effectively.

**SECRETARY TO THE COUNCIL /CEO**

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ACRONYMS

|  |  |
| --- | --- |
| CBET | Competency Based Education and Training |
| CEO | Chief Executive Officer |
| GMP | Good Manufacturing Practices |
| KNQF | Kenya National Qualifications Framework |
| PPE | Personal Protective Equipment |
| SOP | Standard Operation Procedures |
| TVET | Technical and Vocational Education and Training |
| TVETA | Technical and Vocational Education and Training Authority |

**KEY TO ISCED UNIT CODE**



# COURSE OVERVIEW

Meat products processing Level 4 curriculum consists of competencies that a person must have to produce meat products. It involves meat product production, packaging processed meat products, manage meat products hygiene, butchery records and document management.

**Summary Of Units of Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Units Title** | **Unit Duration (Hours)** | **Credit Factor** |
| **MODULE I** | | | |
| 072145101A | Meat products production | 260 | 26 |
| 072145102A | Processed meat products packaging | 100 | 10 |
| **MODULE II** | | | |
| 072145103A | Meat products hygiene management | 100 | 10 |
| 072145104A | Manage records and documents | 100 | 10 |
| **Sub Total** | | **560** | **56** |
| **Industry Training** | | **320** | **32** |
| **GRAND TOTAL** | | **880** | **88** |

**Entry Requirements**

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

* 1. Kenya Certificate of Secondary Education with a minimum of grade E and above

Or

* 1. Equivalent qualifications as determined by TVETA

**Trainer Qualification**

Qualifications of a trainer for this course include:

1. Possession of a Diploma level 5 or higher in Meat Products Processing

1. Registered by TVETA.

**Industrial Training**

An individual enrolled in this course will be required to undergo Industrial attachment for a minimum period of 320 hours in a Meat products processing sector.

**Assessment**

The course shall be assessed formatively and summative:

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. Assessments of basic and common competencies shall be integrated in the core units.
4. Theoretical and practical weight shall be 10:90 respectively for each unit of learning.
5. Formative and summative assessments shall be weighted at 60% and 40% respectively in the overall unit of learning score.
6. Assessment performance rating for each unit of competency shall be as follows:

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

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

**Certification**

A candidate will be issued with a Certificate of Competency upon demonstration of competence in a core unit of competency. To be issued with Kenya **National TVET Certificate** in meat product processing level 4, the candidate must demonstrate competence in all the Units of Competency as given in the qualification pack. A Statement of Attainment certificate may be issued upon demonstration of competence in a certifiable element within a unit.

The certificates will be issued by the Qualification Awarding Institution

## MEAT PRODUCTS PRODUCTION

**UNIT CODE: 072145101A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: **Produce meat products**

**Duration of Unit:** 260 hours

**Unit Description**

This unit specifies the competencies required to produce meat products. It involves assessing animal meat quality, meat curing and process meat products

**Summary of Learning Outcomes**

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

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1. | Assess animal meat quality | **30** |
| 2. | Meat curing | **30** |
| 3. | Process meat products | **200** |
| **Total** | | **260** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Assess animal meat quality | * 1. Objectives of assessing meat quality   2. Definition of terminologies   3. Factors that influence meat quality   4. Methods of assessing meat quality | * Practical * Demonstration * Observation * Oral questioning * Written tests |
| 1. Cure meat | * 1. Define Cured meat   2. Identify types of Cured meat   3. Identify and assemble Common curing ingredients.   2.4 Identify Cured meat products | * Practical * Demonstration * Observation * Oral questioning * Written tests |
| 1. Process meat products | * 1. Objectives of processing   2.2 Types of processed meat products based on animal species  2.2.1 Fresh meat cuts  2.2 2 Ham  2.2.3 Sausages  2.2.4 Meat Loaf  2.2.5 Salami  2.2.6 Cured meat  2.2.7 Bacon  2.2.8 Burger  3. Cooked meats  2.3 Methods of meat product processing  2.3.1 Salting  2.3.2 Curing  2.3.3 Fermentation  2.3.4 Smoking  2.3.5 Canning   * + 1. Drying   2.4 Procedures in processing various meat products  2.5 Food ingredients  2.5.1 Monosodium Glutamate  2.5.2 Nitrate Salts  2.5.3 Salt  2.5.4 Spices  2.5.5 Binders  2.5.6 Preservatives  2.5.7 Phosphates  2.6 Legal and Socio-cultural issues related to food additives   * 1. Good manufacturing practices (GMP and GHP)   2. Legislation in meat products processing   2.8.1 Labeling requirements  2.8.2 Inspection and certification | * Practical * Demonstration * Observation * Oral questioning * Written tests |
| 1. Preserve processed meat products | 3.1 Objective of meat preservation  3.2 Principles of meat preservation  3.2.1 Temperature  3.2.2 Moisture control  3.2.3 Packaging  3.2.4 Chemical preservation  3.3 Tools and equipment used in meat preservation  3.3.1 Refrigerator  3.3.2 Dehydrator  3.3.3 Smoking chambers  3.3.4 Smoke House  3.4 Factors determining choice of preservation methods  3.5 Meat spoilage and causative factors | * Practical * Observation * Demonstration * Oral questioning * Written tests |

**Suggested Methods of Instruction**

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

**Recommended Resources**

**Tools and equipment**

* Meat mincers 5pcs
* Knives 25pcs
* Electric saw 1 pc
* Chopping surfaces 25pcs
* Meat tenderizer 1 pc
* Vacuum sealer 1 pc
* Smoke House 1pc
* Digital/Electric Weighing balances 5pcs
* Freezer/cold room 1 pc
* Refrigerator 1pc
* Knives sterilising chamber box 1pc
* Sausage mixer 1pc
* Bowl cutter 1 pc

**Materials and supplies**

* Stationary
* Detergents
* Disinfectants
* Lubricants
* Portable water
* Sanitizers
* Hand towels
* Disposable towels

**Personal protective equipment (PPEs)**

* White gumboots
* White plastic aprons
* White dust coat
* White caps
* White helmets
* Dust masks
* Heavy cold room clothing
* Steel chain gloves
* Disposable gloves
* Safety goggles
* First aid kit

**Facilities**

Offices, hand wash basins, soak pits, lagoons, toilet and bathrooms, condemnation pits, incinerators, foot bath, footwear washing facilities, dressing rooms, water reservoir, canteen, processing rooms.

## MEAT PRODUCT PACKAGING

**UNIT CODE: 072145102A**

**Relationship to Occupational Standards pack**

This unit addresses the Unit of Competency: **Package meat products**

**Duration of Unit:** 100 hours

**Unit Description**

This unit specifies the competencies required to package meat-based products. It involves weighing meat products, packaging processed meat product, labeling meat packaged products and cleaning packaging equipment.

**Summary of Learning Outcomes**

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

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1. | Weigh meat products | **15** |
| 2. | Package processed meat products | **25** |
| 3. | Label processed meat products | **10** |
| 4. | Clean packaging equipment after processing | **20** |
| **Total** | | **70** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Weigh meat products | * 1. Objectives of weighing   2. Equipment used in weighing meat products   1.3 Legislation related to weighing | * Practical * Observation * Demonstration * Oral questioning * Written tests |
| 1. Package processed meat product | * 1. Objectives of packaging Requirement for packaging materials   2. Types of packaging material   3. Methods of packaging   4. Hygiene practices in packaging meat   5. Factors influencing packaging   6. Environmental issues related to processing and packaging   7. Legislation in meat products packaging | * Practical * Observation * Demonstration * Oral questioning * Written tests |
| 1. Label meat products | * 1. Objectives of labeling   2. Requirement for labeling Materials used in labelling packaged meat products   3. Types and method of Legislation in meat products labeling   4. Tools and equipment used in meat product labeling   5. Hygiene practices in labeling   6. Legislation related to labeling | * Practical * Observation * Oral questioning * Written tests * Demonstration |
| 1. Clean packaging equipment | * 1. Objectives of cleaning   2. Procedure of cleaning and sterilization of tools and equipment   3. Hygiene in handling meat packaging and labelling equipment   4. Maintenance of the meat packaging equipment   5. Storage of tools and equipment | * Practical * Demonstration * Observation * Oral questioning * Written tests |

**Suggested Methods of Instruction**

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

**Recommended Resources**

**Tools and equipment**

* Weighing scales
* Vacuum packers
* Trays
* Benches
* Weighing containers
* Packaging materials
* Labels
* Labelling equipment

**Materials and supplies**

* Meat wrapping materials
* Stationery
* Detergents
* Disinfectants
* Lubricants
* Portable water
* Sanitizers
* Tissues
* Disposable towels

**Personal protective equipment (PPEs)**

* White Gumboots
* White Overalls
* White Dust coat
* White Caps
* White Helmets
* Dust masks
* Disposable gloves
* Safety goggles
* First aid kit

**Facilities**

Offices, cold rooms, hand wash basins, toilet and bathrooms, condemnation pits, footwear washing facilities, dressing rooms, water reservoir

## EAT PRODUCTS HYGIENE MANAGEMENT

**UNIT CODE: 072145103A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: **manage meat products hygiene**

**Duration of Unit:** 100 hours

**Unit Description**

This unit specifies the competencies required to manage meat products hygiene. It involves managing meat animal blood, bones, horns and hooves; managing meat animal fats; meat animal ingesta and managing animal hairs and poultry feathers. It also includes maintaining animal by-products records.

**Summary of Learning Outcomes**

1. Manage personnel hygiene
2. Manage facility hygiene
3. Manage equipment hygiene

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

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1. | Manage personnel hygiene | **15** |
| 2. | Manage facility hygiene | **15** |
| 3. | Manage equipment hygiene | **15** |
| 4. | Manage product hygiene | **15** |
| 5. | Manage environmental hygiene | **10** |
| **Total** | | **70** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Manage personnel hygiene | * 1. Definition of terminologies   2. Objectives of personnel hygiene   3. Personal hygiene practices   4. Legal requirements in personnel hygiene | * Practical * Demonstration * Observation * Oral questioning * Projects * Written tests |
| 1. Manage facility hygiene | * 1. Objectives of facility hygiene   2. Cleaning and Sanitation procedures   3. Detergents and disinfectants   4. Water quality   5. Cleaning tools and equipment   6. Facility drainage system. | * Practical * Demonstration * Observation * Oral questioning * Written tests |
| 1. Manage equipment hygiene | * 1. Objectives of equipment hygiene management   2. Equipment cleaning and washing procedures (SOPs)   3. Equipment disinfection and sterilization (SOPs) | * Practical * Demonstration * Observation * Oral questioning * Written tests |

**Suggested Methods of Instruction**

* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Viewing of related videos
* Direct instruction

**Recommended Resources**

**Tools and equipment**

* Meat mincers
* Knives
* Packaging materials
* Electric saw
* Chopping surfaces
* Tumblers/meat tenderizer
* Dispensers
* Weighing scales

**Materials and supplies**

* Stationary
* Detergent
* Disinfectants
* Lubricants
* Portable water
* Sanitizers
* Tissues
* Disposable towels

**Personal protective equipment (PPEs)**

* White gumboots
* White plastic aprons
* White dust coat
* White caps
* White helmets
* Dust masks
* Heavy cold room clothing
* Steel chain gloves
* Disposable gloves
* Safety goggles
* First aid kit

**Facilities**

Offices, hand wash basins, soak pits, lagoons, toilet and bathrooms, condemnation pits, incinerators, foot bath, footwear washing facilities, dressing rooms, water reservoir, canteen, processing rooms.

## RECORDS AND DOCUMENT MANAGEMENT

**UNIT CODE: 072145104A**

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: **Manage records and documents**

**Duration of Unit:** 100 hours

**Unit Description**

This unit specifies the competencies required to manage products processing records and documents. It involves gathering the required documents, recording meat products stocks and storing the meat products processing records and documents.

**Summary of Learning Outcomes**

1. Gather the required documents
2. Record meat products stocks
3. Keep the meat products processing records and documents

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

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1. | Gather the required documents | **15** |
| 2. | Record meat products stocks | **15** |
| 3. | Store the meat products processing records and document | **20** |
| **Total** | | **50** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Gather the required documents | * 1. Types of records and documents   2. Legislation related to meat products processing      1. Meat control act      2. Kenya meat commission act      3. Transport of meat regulations      4. Environmental management and coordination act | * Observation * Oral questioning * Written tests * Portfolio of evidence |
| 1. Record meat products stocks | * 1. Objectives of stock taking   2. Required meat records   3. Procedures of stock taking | * Observation * Oral questioning * Written tests |
| 1. Keep the meat products processing records and documents | * 1. Objectives of record keeping   2. Record keeping methods   3.3 Safe keeping of records and documents   * 1. Disposal of unwanted records | * Observation * Oral questioning * Written tests |

**Suggested Methods of Instruction**

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

**Recommended Resources**

**Tools and equipment**

* File cabinets
* Staplers
* Paper punch
* Paper trimmers
* Computers
* Printers
* Projectors
* Scanners
* Screens

**Materials and supplies**

Assorted Stationary; papers, pens, files, office glue, pins, rulers, ink, toners, cartridges

**Personal protective equipment (PPEs)**

* Dust coat
* Disposable gloves
* Safety goggles
* First aid kit

**Facilities**

Offices, registry offices, stores, board rooms, furniture, Meat processing workshop.