****

**REPUBLIC OF KENYA**

**COMPETENCY BASED MODULAR CURRICULUM**

**FOR**

**POULTRY (BROILER) PRODUCTION**

**KNQF LEVEL 3**

**ISCED CODE: 0811 254 A**

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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.

**TABLE OF CONTENTS**

[FOREWORD iii](#_Toc20854)

[Ministry of education, iii](#_Toc11828)

[Principal secretary , iii](#_Toc24492)

[State department for tvetPREFACE iii](#_Toc4701)

[ABBREVIATIONS AND ACRONYMS vii](#_Toc2666)

[KEY TO ISCED UNIT CODE ix](#_Toc404)

[COURSE OVERVIEW x](#_Toc3861)

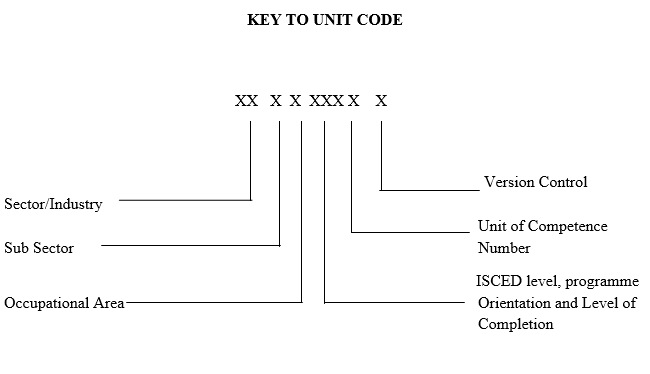
[CONSTRUCTION OF POULTRY SRUCTURES 1](#_Toc6846)

[MANAGEMENT OF BROILER CHICK BROODING 6](#_Toc29619)

# ABBREVIATIONS AND ACRONYMS

|  |  |
| --- | --- |
| 2D | 2 Dimensional |
| 3D | 3 Dimensional |
| AHITI | Animal Health and Industry Training Institute |
| ATVET | Agricultural Technical and Vocational Education and Training |
| AU - IBAR | African Union – InterAfrican Bureau for Animal Resources |
| CAADP | Comprehensive Africa Agricultural Development Programme |
| CAD | Computer Assisted Drawing |
| CBET | Competency Based Education and Training |
| CDACC | Curriculum Development Assessment and Certification Council |
| CEO | Chief Executive Officer |
| DACUM | Develop a Curriculum |
| DTI | Dairy Training Institute |
| DVS | Director of Veterinary Services |
| EMCA | Environmental Management and Conservation Act |
| EMS | Environmental Management Systems |
| FSDRP | Food Security and Drought Resilience Programme |
| FSP | Food Security Project |
| GDP | Gross Domestic Product |
| GMP | Good Manufacturing Practices |
| HACCP | Hazard Analysis Critical Control Point |
| ICT | Information Communication Technology |
| IM | Intra Muscular |
| KCSE | Kenya Certificate of Secondary Education |
| KNQA | Kenya National Qualifications Authority |
| KNQF | Kenya National Qualifications Framework |
| KSPCA | Kenya Society for the Care and Protection of Animals |
| LCD | Liquid Crystal Display |
| MAP | Modified Atmosphere Packaging |
| MoALF&I | Ministry of Agriculture, Livestock, Fisheries and Irrigation |
| MoE | Ministry of Education |
| NCA | National Construction Authority |
| NEMA | National Environmental Management Authority |
| NEPAD | New Partnerships for African Development |
| NGO | Non-Governmental Organization |
| NPCA | NEPAD Planning and Coordinating Agency |
| OIE | World Organization for Animal Health |
| OS | Occupational Standard |
| OSH | Occupational Safety and Health |
| PPE | Personal Protective Equipment |
| PSSAC | Poultry Sector Skills Advisory Committee |
| 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

Poultry Broiler Production Level 3 qualification consists of competencies that an individual must have to produce broiler chicken. It involves constructing poultry structures and managing broiler chick brooding.

The units of learning comprising Poultry Broiler Production Level 3 qualification include:

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** | **Credit Factor** |
| 0811 251 01A | Construction of Poultry Structures | 180 | 18.0 |
| 0811 251 02A | Management of Broiler Chick Brooding | 120 | 12.0 |
|  | Industrial Attachment | 240 | 24.0 |
| **TOTAL** | | **540** | **54.0** |

**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 qualifications as determined by relevant regulatory body

**Trainer Qualification**

Qualifications of a trainer for this course include:

1. Possession of Poultry Production Level 5 or level 5 in related trade area;
2. License by TVETA

**Credit Accumulation, Transfer, and Exemptions**

………… (QAI) Guidelines on credit accumulation and transfer shall apply.

**Industry Training**

An individual enrolled in this course will be required to undergo industry training for a minimum period of 240 hours in the broiler production farm. The industrial training may be taken after completion of all units for those pursuing the full qualification or be distributed equally in each unit for those pursuing part qualification. In the case of dual training model, industrial training shall be as guided by the dual training policy.

**Assessment for level 3**

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**

A candidate will be issued with a Certificate of Competency upon demonstration of competence in a Unit of Competency. To be issued with the Kenya National TVET Certificate in Broiler Poultry Production Level 3, the candidate must demonstrate competence in all the Units of Competency as given in the qualification pack. Statement of Attainment Certificate may be awarded upon demonstration of competence in certifiable element within a unit.

These certificates will be issued by Qualification Awarding Institution.

# CONSTRUCTION OF POULTRY SRUCTURES

**UNIT CODE:** 0811 251 01A

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Construct Poultry Structures

**Duration of Unit**: 180 hours

**Unit Description**

This unit specifies the competencies required to construct poultry structures. It involves preparing to construct poultry structures, constructing poultry house structure, installing poultry house structures and equipping poultry house.

**Summary of Learning Outcomes**

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

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
| 1. | Prepare to construct poultry structures | 40 |
| 2. | Construct poultry structures | 50 |
| 3. | Install poultry house structures | 50 |
| 4. | Equip poultry house | 40 |
| **Total** | | **180** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Prepare to construct poultry structures | * 1. Types of poultry structures      1. Brooder      2. Rearing house      3. Store   2. Factors determining type of poultry house      1. Type of birds      2. Production system      3. Cost   3. Construction materials   4. Poultry structures site praparation   5. Personal Protection Equipment and Apparel (PPEs) required in poultry house construction      1. Overalls      2. Gumboots      3. Nose and mouth mask | * Written tests * Observation * Oral questions * Third party report |
| 1. Construct poultry structures | 2.1. Accessory structures required in a poultry house  2.1.1. Perches  2.1.2. Foot bath  2.1.3. Cages  2.2. Various designs of poultry structures.  2.3. Occupational safety and health procedures in poultry house construction.  2.4. Environmental protection measures observed during poultry house construction.  2.4.1. NEMA certification  2.5. Construction materials  2.5.1. Types  2.5.2. Quality  2.5.3. Storage | * Written tests * Observation * Oral questions * Third party report |
| 1. Construct and install poultry house structures | 3.1. Poultry house layout  3.1.1. Area measurement  3.1.2. Pegging  3.2. Poultry house foundation  3.2.1. Excavation  3.2.2. Mixing ratios of mortar  3.2.3. Stone laying  3.3. Construction of poultry house parts  3.3.1. Floor  3.3.2. Wall  3.3.3. Roof   * 3.4. Construction of security and bio-security measures   3.4.1. Predators barriers  3.4.2. Vehicle and human traffic controls  3.5. Construction of accessory structures  3.5.1. Perches  3.5.2. Cages  3.5.3. Poultry pallets  3.5.4. Foot bath  3.6. Site clearing  3.6.1. Debris disposal  3.7. Work inspection  3.8. Critical house requirements | * Written tests * Observation * Oral questions * Third party report * Project |
| 1. Equip poultry house | 4.1. Equipment and materia**l** necessary in a poultry house  4.1.1. Types and use (Waterers, feeders and thermometer)  4.1.2. Specifications and quantity  4.2. Factors considered in installation of equipment and materials in poultry house  4.2.1. Time  4.2.2. Pattern  4.2.3. Safety precautions  4.2.4. Number of birds  4.3. Testing-running of the equipment  4.3.1. Heat source  4.3.2. Waterers  4.3.3. Feeders  4.3.4. Ventilation  4.3.5. Lighting | * Written tests * Observation * Oral questions * Third party report * Interviewing * Project and report writing |

**Suggested Methods of Delivery**

* Demonstration
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction
* Case studies
* Simulation
* Audio-visual aids
* Modelling

**Recommended Resources**

|  |  |  |
| --- | --- | --- |
| Functional poultry farm with the following: | | |
| * Poultry house * Equipments   + Brooder   + Brooder thermometer   + Hygrometer   + Waterers   + Feeders   + Complete Battery cage system   + Bedding materials   + Buckets   + Grit / shell container * Sand bath | * Brooder * Store * Accessory structures * Saw * Stones * Sand * Cement * Ballast * Timber * Slashers * Crowbar | * Hammer * Nails * String * Wooden pegs * Tape measures * Barbed/chain link * Hoe * Shovels * Wheel burrow |

# MANAGEMENT OF BROILER CHICK BROODING

**UNIT CODE:** 0811 251 02A

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Manage Broiler Chick Brooding

**Duration of Unit:** 120 hours

**Unit Description**

This unit specifies the competencies required to manage broiler chick brooding. It involves preparing chick brooder, acquiring day-old chicks, feeding brooding chicks, managing brooder house microclimate, maintaining brooder hygiene and performing chick vaccination. It also entails controlling poultry vermin, controlling poultry predators and monitoring chick performance.

**Summary of Learning Outcomes**

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

|  |  |  |
| --- | --- | --- |
| **S/No** | **Learning Outcomes** | **Duration (Hours)** |
|  | Prepare chick brooder | 10 |
|  | Acquire day-old chicks | 10 |
|  | Feed brooding chicks | 20 |
|  | Manage brooder house micro climate | 10 |
|  | Maintain brooder hygiene | 10 |
|  | Perform chick vaccination | 10 |
|  | Control poultry vermin | 10 |
|  | Control poultry predators | 10 |
|  | Monitor chick performance | 30 |
| **Total** | | **120** |

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Prepare chick brooder | * 1. Suitable brooder construction materials   2. Brooder assembly guidelines.   3. Cleaning and disinfection of brooder   4. Types of bedding materials   5. Suitable bedding materials   6. Sterilization of bedding materials   7. Cleaning and sterilization of brooder equipment.   8. Installation of brooder equipment      1. Types of brooder equipment      2. Standard operation of the equipment      3. Time schedule for placement of various equipment   9. Test-running the equipment | * Written tests * Observation * Oral questions * Third party report * Interviewing * Project |
| 1. Acquire day-old chicks | 2.1. Handling of day-old chicks  2.2. Preparing for transportation  2.3. Transportation of chicks  2.3.1. Cages for transportation  2.3.2. Time of transportation  2.3.4. Safety during transportation | * Written tests * Observation * Oral questions * Third party report * Interviewing * Project |
| 1. Feed brooding chicks | 3.1. Feeding requirements of chicks  3.1.1. Amount  3.1.2. Feeding schedule  3.1.3. Ad libitum feeding  3.1.4. Light schedule  3.2. Water requirements of chicks  3.2.1. Quality  3.2.2. Quantity | * Written tests * Observation * Oral questions * Third party report * Interviewing * Project |
| 1. Manage brooder house micro climate | 4.1. Methods of assessing micro-climatic variations in brooder house  4.1.1. Use of tools and equipment  4.1.2. Animal behaviour  4.1.3. Human senses  4.1.4. Non-conventional aids  4.2. Corrective measures for micro-climate variations  4.2.1. Temperature  4.2.2. Humidity  4.2.3. Ventilation  4.2.4. sLighting. | * Written tests * Observation * Oral questions * Third party report * Interviewing * Project |
| 1. Maintain brooder hygiene | 5.1. Bio-safety practices required in brooding  5.2. Assessment of Bio-safety conformity  5.2.1. Staff Monitoring  5.2.3. Structures and facilities | * Written tests * Observation * Oral questions * Third party report * Interviewing * Project |
| 1. Perform chick vaccination | 6.1. Chick vaccination schedule  6.2. Handling and storage of vaccines  6.3. Equipment and tools required for vaccination.  6.4. Vaccination procedures.  6.4.1. Pre- vaccination preparation  6.4.2. Actual vaccination  6.5. Chick vaccination records | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Control poultry vermin | 7.1. Identification of vermin  7.1.1. Lice  7.1.2. Mites  7.1.3. Fleas  7.2. Vermin control measures  7.2.1. Chemical  7.2.2. Structural related  7.2.3. Cultural practices | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Control poultry predators | 8.1. Types of predators  8.1.1. Man  8.1.2. Cats  8.1.3. Dogs  8.1.4. .Mongoose  8.1.5. Hawks  8.1.6. Rats  8.2. Predator control measures for brooder house  8.2.1. Chemical  8.2.2. Mechanical  8.2.3. Biological  8.2.4. Structural –related controls | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Monitor chick performance | * 1. Growth and development pattern in chicks      1. Feathering      2. Weight gain   2. Chick behaviour      1. Feeding behaviour      2. Activity   3. Methods of assessing growth performance of chicks      1. Weighing      2. Physical appearance   4. Performance assessment equipment and tools.   5. Poultry vices      1. Types      2. Control measure   6. Culling of chicks      1. Culling criteria.      2. Stages of culling | * Written tests * Observation * Oral questions * Third party report * Interviewing * Project |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Discussions
* Direct instruction
* Case study
* Audio –visual aids

**Recommended Resources**

|  |  |  |
| --- | --- | --- |
| Functional Brooder house with the following: | | |
| * Day old chicks * Heat source * Chick feeders * Chick drinkers * Light source | * Brooder guard * Curtains * Brooder thermometer * Hygrometer * Beddings | * Weighing scale * Chick feeds * Water * Vaccines * Vaccination equipment |