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**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**POULTRY HATCHERY OPERATOR**

**LEVEL 4**

****

**TVET CDACC**

**P.O. BOX 15745-00100**

**NAIROBI**

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# FOREWORD

Agriculture plays an important role in Kenya’s economy. This importance is reflected in the positive correlation between growth in the agricultural sector and that of the national economy. Kenya’s economy registered a growth of 3.3% between 2013 and 2014, agriculture was the leading sector which contributed 27.3% to the Gross Domestic Product (GDP) in 2014. In this regard, crops, animal production, and fishing and aquaculture contributed 19.7%, 4.9% and 0.8% respectively (25.4%), while the balance of 1.9% came from forestry and other support activities. Like most countries in Africa, majority (61%) of Kenya’s population rely on agriculture for employment despite the challenges of climate change, soil degradation and increasing population pressure. In order to enhance the productivity of the work force and ensure a productive and innovative agricultural sector, as well as food security, meaningful education and training of all people involved is of utmost importance.

In the past Agricultural Technical and Vocational Education and Training (ATVET) did not always receive adequate attention from policy-makers. The education system emphasized on acquiring knowledge rather than skills development. This resulted to most farmers and the stakeholders in agriculture lacking the requisite skills. Current reforms in the education system aim at addressing this challenge by reforming the curriculum, its delivery and its assessment. These reforms can only be achieved through Competency Based Education and Training (CBET) approach. The reforms demand for a competency-based curriculum which is a tool that will aid in the development of skills, knowledge and attitudes of the farmers. Such training will improve crop and animal husbandry skills which will in turn contribute to increased productivity and improvement of agriculture in the country. Ideally, this education and training will not only include farmers, but all professions involved in agriculture

These Occupational Standards as such presents us with a base for developing curricula for training in the poultry subsector and presents the basis for content development for the curriculum in Poultry Hatchery Operations Level 4. It will lead to a situation where the trainees will gain skills required in their occupation/jobs. The curriculum to be developed based on these OS will revolutionize the Agriculture sector in Kenya.

**PRINCIPAL SECRETARY,
STATE DEPARTMENT OF LIVESTOCK**

**MINISTRY OF AGRICULTURE, LIVESTOCK, FISHERIES AND IRRIGATION**

# PREFACE

Poultry farming has been on the increase in the last ten years due to diminishing land size, high population density and the escalating un-employment levels in formal sector. It contributes to the lives of 21 million Kenyans and 6.1% of the agricultural GDP. There are approximately 32 million birds in Kenya out of which 76% are free ranging indigenous chicken, 8% are broilers and 14% commercial layers. The indigenous poultry production involves 75% of rural households. As of 2011, it was reported that approximately 71% of eggs and poultry meat in Kenya are derived from indigenous poultry. In 2006, it was reported that commercial poultry production constitutes 23.8% of the total poultry population, with broilers representing 16.2% and layers another 7.8%. Other poultry species such as ducks, guinea fowl, Quails and turkeys comprise about 2.2% of the total poultry population. The industry is therefore is supposed to play a strategic role in the ongoing socio economic pillar under the vision 2030.

However, the industry has seen slow growth over the past years due to lack of skills and increasing costs of production. This is despite the fact that the sub-sector contributes positively to wealth creation, poverty alleviation, and gender equity especially in the rural areas. The industry contributes to the macro economy by generating incomes for the value chain actors, creation of employment opportunities for rural people and provision of source of protein for poor families and manure for their gardens.

To address the challenge of lack of skilled labour, a Competency Based curriculum development process was initiated. Using the DACUM methodology Job or Occupational Analysis Chart and later these Occupation standards were developed in collaboration with the industry players and guided by Curriculum Development Assessment and Certification Council (CDACC). 11 Jobs/Occupations were identified. The information generated from the task analysis was also used to develop the Units of competences for each job. This was done by experts drawn from Technical training institutions, Universities and industry representatives. The result of the analysis was to the realization of Occupational Standards for 11 jobs along the poultry value chain.

The OS were presented to the Poultry Sector Skills Advisory Committee (PSSAC) who made recommendations for improvement and later submitted to the next stages of approval by the CDACC. The OS development process was a rigorous exercise that involved wide consultations with various stakeholders like expert workers with the aim of enriching it and promoting its acceptance. The end product is a rich and well thought tool that will be used to develop Poultry Hatchery Operations Level 4 curriculum that shall deliver Competence Based Training and produce competent graduates that can employed, entrepreneurs or self-employed in the poultry industry.

**CHAIRMAN**

**TVET CDACC.**

# ACKNOWLEDGEMENTS

These occupational standards were developed through the combined efforts of different stakeholders in the poultry subsector namely private practitioners, Dairy Training Institute (DTI), Animal Health Training institutes (AHITI), regulators and key state departments. We wish to acknowledge the invaluable contribution received from the private sector industry players who provided inputs towards the development of these occupational standards against which the curriculum was developed.

With the Occupational /Job Analysis charts in hand, the stakeholders provided technical inputs towards the development and completion of this OS. They sat through many hours putting together all the knowledge, skills and attitudes that a Poultry industry worker would require in effectively performing his/ her duties and tasks as per the occupational standards developed.

We are most sincerely thankful to the heads of these institutions who released their staff to join in this important course. Our gratitude goes to the various facilitators that moderated several workshops and ensured that all deliberations and outputs were captured and compiled. These persons did not only demonstrate patience, but also provided leadership by motivating and guiding the groups towards the finalization of this curriculum. We cannot forget to thank the government agencies that regulate the Technical and Vocational Education and Training (TVET) system namely TVET Authority and CDACC through whom guidance and support was provided on this Occupational Standards development.

We are greatly indebted to the Food Security and Drought Resilience Programme (FSDRP) with support of the German Development Cooperation (GIZ), which enabled the implementation of the curriculum development process through the Food Security Project (FSP). In the same breath, we are indebted to the National Coordinator of the GIZ Comprehensive Africa Agricultural Development Programme (CAADP) ATVET project who was instrumental in enabling the smooth and close cooperation between the project and the key government ministries namely Ministry of Agriculture, Livestock, Fisheries and Irrigation (MoALF&I) and Ministry of Education (MoE).

Last but not least, we are grateful to any other person, institution, organization or company who played any role in making this process successful but has not been mentioned. We dearly acknowledge your contribution and support.

**CHAIRPERSON**

**POULTRY SECTOR SKILLS ADVISORY COMMITTEE (PSSAC)**

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# 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 UNIT CODE**

 **POL /OS/ HT /BC /01 /4/ A**

Industry or sector

Occupational Standards

Occupational area

Type of competency

Competency number

Competency level

Version control

#  OVERVIEW

Poultry Hatchery Operator Level 4 qualification consists of units of competency that a person must achieve to handle eggs for hatching, hatch poultry eggs and handle hatched chicks.

The units of competency comprising Poultry Hatchery Operator Level 4 qualification include the following:

**BASIC UNITS OF COMPETENCY**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| POL/OS/HT/BC/01/4/A | Demonstrate Communication Skills |
| POL/OS/HT/BC/02/4/A | Demonstrate Numeracy Skills |
| POL/OS/HT/BC/03/4/A | Demonstrate Digital Literacy |
| POL/OS/HT/BC/04/4/A | Demonstrate Entrepreneurial Skills |
| POL/OS/HT/BC/05/4/A | Demonstrate Employability Skills |
| POL/OS/HT/BC/06/4/A | Demonstrate Environmental Literacy |
| POL/OS/HT/BC/07/4/A | Demonstrate Occupational Safety and Health Practices |

**CORE** **UNITS OF COMPETENCY**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| POL/OS /HT/CR/01/4/A | Handle Eggs for Hatching |
| POL/OS /HT/CR/02/4/A | Hatch Poultry Eggs |
| POL/OS /HT/CR/03/4/A | Handle Hatched Chicks |

# BASIC UNITS OF LEARNING

# DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE: POL/OS/HT/BC/01/4/A**

**UNIT DESCRIPTION**

This unit covers the competencies required demonstrate communication skills. It involvesobtaining and conveying workplace information, completing relevant work-related documents, communicating information about workplace processes, leading workplace discussion and communicating workplace issues.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT** These describe the key outcomes which make up workplace function | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Obtain and convey workplace information
 | 1. Specific and relevant information is accessed from ***appropriate sources*** based on standard procedures
2. Effective questioning, active listening and speaking skills are used to gather and convey information based on communication needs
3. Appropriate ***medium*** is used to transfer information and ideas in accordance with workplace guidelines
4. Appropriate non- verbal communication is used as per the communication needs
5. Appropriate lines of communicationwith supervisors and colleagues are identified and followed based on workplace requirements
6. Location and storage of information is undertaken according to workplace procedures
	1. Personal interaction is carried out clearly and concisely according to workplace requirements
 |
| 1. Complete relevant work-related documents
 | * 1. Range of forms relating to conditions of employment are completed according to workplace procedures
	2. Workplace data is recorded based on workplace requirements
	3. Errors in recording information are identified and acted upon in accordance with workplace policies
	4. Reporting requirements are completed according to organizational guidelines
 |
| 1. Communicate information about workplace processes
 | 1. Information sources are identified according to workplace procedures
2. ***Methods of communication*** are selected based on workplace guidelines
3. Multiple operations are communicated according to workplace structure
4. Work-related questions are asked and responded based on set protocols
5. Information is selected and organized according to workplace requirements
6. Verbal and written reporting is undertaken as per workplace requirements
7. Communication is maintained according to workplace standards
 |
| 1. Lead workplace discussions
 | 1. Response to workplace issues are sought and provided as per workplace protocol
2. Constructive contributions are made based on ***workplace discussions***
3. Workplace objectives and action plan are communicated according to workplace requirements
 |
| 1. Identify and communicate issues arising in the workplace
 | 1. Issues and problems are identified as per workplace guidelines
2. Problems and issues in the workplace are organized according to workplace operations
3. Dialogue is initiated with appropriate personnel as per workplace structure
4. Problems and issues raised are communicated as per the workplace reporting procedures
 |

**RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Methods of communication mayinclude but not limited to:
 | * Non-verbal gestures
* Verbal
* Face to face
* Two-way radio
* Speaking to groups
* Using telephone
* Written
* Internet
 |
| 1. Workplace discussion may include but not limited to:
 | * Coordination meetings
* Toolbox discussion
* Peer-to-peer discussion
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Communication
* Active listening
* Interpretation
* Negotiation
* Writing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Organization requirements for written and electronic communication methods
* Effective verbal communication methods
* Report writing
* Effective questioning techniques (clarifying and probing)
* Workplace etiquette

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical aspects of Competency
 | Assessment requires evidence that the candidate: 1. Dealt with a range of communication/information at one time
2. Made constructive contributions in workplace issues
3. Sought workplace issues effectively
4. Responded to workplace issues promptly
5. Presented information clearly and effectively in written form
6. Used appropriate sources of information
7. Asked appropriate questions
8. Provided accurate information
 |
| 1. Resource Implications
 | 1. Access to relevant workplace where assessment can take place
2. Appropriately simulated environment where assessment can take place
3. Materials relevant to the proposed activity or tasks
 |
| 1. Methods of Assessment
 | 1. Third-party reports
2. Portfolio
3. Interview
4. Written tests
5. Observation
6. Oral questioning
 |
| 1. Context of Assessment
 | Competency may be assessed 1. On the job
2. Off the job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE NUMERACY SKILLS

**UNIT CODE: POL/OS/HT/BC/02/4/A**

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate numeracy skills. It involves identifying and using whole numbers and simple fractions, decimals and percentages for work, identifying, measuring and estimating familiar quantities for work, reading and using familiar maps, plans and diagrams for work, identifying and describing common 2D and some 3D shapes for work, constructing simple tables and graphs for work using familiar data and identifying and interpreting information in familiar tables, graphs and charts for work

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT** These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms*** ***are elaborated in the Range.*** |
| 1. Identify and use whole numbers and simple fractions, decimals and percentages for work
 | 1. Simple fractions, decimals and percentages identified and interpreted as per standard operating procedures.
2. Understanding of place value by organising numbers from smallest to largest demonstrated as SOPs
3. Required numerical information located and decision made on appropriate method to solve a problem as per SOPs
4. Limited range of calculations performed using the four operations using SOPs
5. Links between operations described as per SOPs
6. Estimations made to check reasonableness of results of problem-solving process as SOPs
7. Numerical information recorded, and the result of the task communicated using informal and some formal language and symbolism as per workplace procedures
 |
| 1. Identify, measure and estimate familiar quantities for work
 | 1. Measurement information in workplace tasks and texts identified and interpreted as per workplace procedures.
2. Familiar units of measurement needed for tasks is identified as per measurements manuals/charts
3. Familiar and simple amounts estimated as per workplace procedures.
4. Appropriate measuring equipment selected as per SOPs
5. ***Simple measuring equipment*** graduated in familiar units to measure relevant quantities is used as per graduation manuals.
6. Calculation done using familiar units of measurement as per SOPs
7. Measurements and results checked against estimates as per job specifications.
8. Results are recorded or reported as per workplace procedures
9. Results relevant to the workplace task are communicated using informal and some formal mathematical and general language as per workplace procedures.
 |
| 1. Read and use familiar maps, plans and diagrams for work
 | 1. Items and places are in familiar maps, plans and diagrams as per SOPs
2. Common symbols and keys recognised in familiar maps, plans and diagrams as per SOPs
3. Understanding of direction and location demonstrated by describing the location of objects, or route to familiar places as per SOPs
4. Instructions to locate familiar objects or places are given and followed as per SOPs
5. Informal and some formal oral mathematical language and symbols are used as per SOPs
 |
| 1. Identify and describe common 2D and some 3D shapes for work
 | 1. ***Common 2D shapes and some common 3D shapes*** in familiar situations are identified and named as per job requirements
2. Common 2D shapes and designs are compared and classified as per SOPs
3. Informal and some formal language used to describe common two-dimensional shapes and some common three-dimensional shapes in accordance with workplace procedures.
4. Simple items used to draw or construct common 2D shapes as per workplace procedures.
5. Common 3D shapes matched to their 2D sketches or nets as per SOPs
 |
| 1. Construct simple tables and graphs for work using familiar data
 | 1. Common types of graphs are identified and named as per SOPs
2. Familiar data to be collected is determined in accordance with job specifications.
3. A method to collect data is selected in accordance with workplace procedures.
4. A small amount of simple familiar data is collected as per workplace procedures
5. One or two variables determined from the data collected as per SOPs.
6. Data ordered and collated as per standard operating procedures.
7. A table is constructed and data entered as per SOPs
8. Graphs are constructed using data from table as per job specifications
9. Results are promptly checked as per workplace procedures
10. Graph information related to work is reported or discussed using informal and some formal mathematical and general language as per workplace procedures
 |
| 1. Identify and interpret information in familiar tables, graphs and charts for work
 | 1. Simple tables are identified in familiar texts and contexts in accordance with workplace procedures
2. Title, headings, rows and columns located in familiar tables as per SOPs
3. Information and data in simple tables identified and interpreted as per workplace procedures.
4. Information is related in accordance with workplace tasks
5. Familiar graphs and charts are identified in familiar texts and contexts as per SOPs
6. Title, labels, axes, scale and key from familiar graphs and charts are located as per SOPs
7. Information and data in familiar graphs and charts are identified and interpreted as per job requirements
8. Information is related to relevant workplace tasks as per job requirements.
 |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Simple measuring equipment may include but not limited to:
 | * Rulers
* Watches/clocks
* Scales
* Thermometers
* AVO meter
 |
| 1. Common 2D shapes and common 3D shapes may include but not limited to:
 | * Round
* Square
* Rectangular
* Triangle
* Sphere
* Cylinder
* Cube
* Polygons
* Cuboids
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Measuring
* Logical thinking
* Computing
* Drawing of graphs
* Applying mathematical formulas
* Analytical

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Types of common shapes
* Differentiation between two dimensional shapes / objects
* Formulae for calculating area and volume
* Types and purpose of measuring instruments
* Units of measurement and abbreviations
* Fundamental operations (addition, subtraction, division, multiplication)
* Rounding techniques
* Types of fractions
* Different types of tables and graphs
* Meaning of graphs, such as increasing, decreasing, and constant value
* Preparation of basic data, tables & graphs

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical aspects of Competency
 | Assessment requires evidence that the candidate:* 1. Simple fractions, decimals and percentages are correctly identified and interpreted
	2. Performed a limited range of calculations using the 4 operations
	3. Performed calculations using familiar units of measurement
	4. Recognised common symbols and keys in familiar maps, plans and diagrams
	5. Constructed simple tables and graphs using familiar data
	6. Identified and interpret information in familiar tables, graphs and charts
 |
| 1. Resource Implications
 | 1. Access to relevant workplace where assessment can take place
2. Appropriately simulated environment where assessment can take place
3. Materials relevant to the proposed activity or tasks
 |
| 1. Methods of Assessment
 | Competency may be assessed through:1. Written Test
2. Interview
3. Oral Questioning
 |
| 1. Context of Assessment
 | Competency may be assessed 1. On the job
2. Off the job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE DIGITAL LITERACY

**UNIT CODE: POL/OS/HT/BC/03/4/A**

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate digital literacy in a working environment. It entails identifying computer software and hardware, applying security measures to data, hardware, software, applying computer software in solving task sand applying internet and email in communication at workplace.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT** These describe the key outcomes which make up workplace function | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Identify computer software and hardware
 | * 1. ***Appropriate computer software*** is identified according to manufacturer’s specification
	2. ***Appropriate computer hardware*** is identified according to manufacturer’s specification
 |
| 1. Apply security measures to data, hardware, software
 | * 1. ***Data security and privacy are classified*** in accordance with the technological situation
	2. ***Security and control measures*** are applied in accordance with laws governing protection of ICT
	3. Computer threats and crimes are detected as per information security management guidelines.
	4. Protection against computer crimes is undertaken in accordance with laws governing protection of ICT
 |
| 1. Apply computer software in solving tasks
 | * 1. Basic word processing concepts are applied in resolving workplace tasks
	2. Word processing utilities are applied in accordance with workplace procedures
	3. Data is manipulated on worksheet in accordance with office procedures
 |
| 1. Apply internet and email in communication at workplace
 | * 1. Electronic mail is applied in workplace communication in accordance with office procedures
	2. Office internet functions are defined and executed in accordance with office procedures
	3. Network configuration and uses are determined in accordance with office operations procedures
 |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Range** | **Variable** |
| 1. Appropriate computer software may include but not limited to:
 | * Operating system
* MS office
* Web browser
* Media players
 |
| 1. Appropriate computer hardware may include but not limited to:
 | * Computer Case
* Monitor
* Keyboard
* Mouse
* Hard Disk Drive
* Motherboard
* Video Card
 |
| 1. Data security and privacy may include but not limited to:
 | * Confidentiality
* Cloud computing
* Confidentiality
* Cyber terrorism
* Integrity -but-curious data serving
 |
| 1. Security and control measures may include but not limited to:
 | * Countermeasures and risk reduction
* Cyber threat issues
* Risk management
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

* **Required Skills**

The individual needs to demonstrate the following skills:

* Analytical
* Interpretation
* Typing
* Communication
* Computing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Input and output devices
* Central processing Unit (CPU)
* Peripherals
* Storage Media
* Software concept
* Types of concept
* Function of computer software
* Data security and privacy
* Security threats and control measures
* Computer crimes
* Detection and protection of computer crimes
* Laws governing protection of ICT
* Word processing;
* Functions and concepts of word processing.
* Documents and tables creation and manipulations
* Mail merging
* Word processing utilities
* Spread sheet;
* Meaning, formulae, function and charts, uses, layout, data manipulation and application to cell
* Networking and Internet;
* Meaning, functions and uses of networking and internet.
* Electronic mail and world wide web
* Emerging trends and issues in ICT;
* Identify and apply emerging trends and issues in ICT
* Challenges posed by emerging trends and issues

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency
 | Assessment requires evidence that the candidate:* 1. Identified input, output, CPU and storage media devices of computers in accordance to computer specification
	2. Identified concepts, types and functions of computer software according to operation manual
	3. Identified and controlled security threats
	4. Detected and protected computer crimes
	5. Applied word processing in office tasks
	6. Prepared work sheet and applied data to the cells in accordance to workplace procedures
	7. Used Electronic Mail for office communication as per workplace procedure
	8. Applied internet and World Wide Web for office tasks in accordance with office procedures
	9. Applied laws governing protection of ICT
 |
| 1. Resource Implications
 | * 1. Access to relevant workplace where assessment can take place
	2. Appropriately simulated environment where assessment can take place
	3. Materials relevant to the proposed activity or tasks
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written tests
	2. Practical assignment
	3. Interview
	4. Oral Questioning
	5. Observation
 |
| 1. Context of Assessment
 | Competency may be assessed 1. On the job
2. Off the job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE ENTREPRENEURIAL SKILLS

**UNIT CODE: POL/OS/HT/BC/04/4/A**

**UNIT DESCRIPTION**

This unit covers the competencies required demonstrate entrepreneurial skills. It involvescreating and maintaining small scale business, establishing small scale business customer base, managing small scale business and growing/ expanding small scale business.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the **key outcomes** which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms are elaborated in the Range*** |
| 1. Create and maintain small scale business
 | 1. Generation and evaluation of business ideas is undertaken in accordance with the existing procedure
2. Competencies are matched with business opportunities in accordance with business practices.
3. Procedure for starting a small business is identified as per the legal requirements
4. SWOT/ PESTEL analysis and or industrial survey is carried out according to office procedures
5. ***Business operations*** are monitored and controlled following established procedures.
6. Quality assurance measures are implemented in accordance with the business practices.
7. Good relations are maintained with staff/workers as per the workplace policies.
8. Policies and procedures on occupational safety and health and environmental concerns are constantly observed as per the workplace policies
 |
| 1. Establish small scale business customer base
 | 1. Good customer relations are maintained in accordance with office procedures
2. New customers and markets are identified, explored and reached out to according to the marketing plan
3. Promotions/Incentives are offered to loyal customers in accordance with office procedures
4. Additional products and services are evaluated and tried in accordance with marketing strategy
5. Customer record is maintained in accordance with office procedures
 |
| 1. Manage small scale business
 | 1. Enterprise is built up and sustained in line with judicious control of cash flows.
2. Profitability of enterprise is ensured as per the internal controls.
3. Unnecessary or lower-priority expenses and purchases are avoided as per the marketing strategy
4. Basic cost-benefit analysis are undertaken in accordance with office procedures
5. Basic financial management are undertaken in accordance with office procedures
6. Basic financial accounting in undertaken in accordance with office procedures
7. Business ***internal controls*** are implemented in accordance with office procedure
8. Setting business priorities and strategies is carried out according to office procedures
9. Preparation and interpretation of basic financial statements is undertaken in accordance with set procedures
10. Preparation of business plansfor small business is undertaken in accordance with ***business strategy***
11. Business Social Responsibility is maintained in accordance with Standard Operations Procedures (SOP)
 |
| 1. Grow/ expand small scale business
 | 1. Prepared business growth strategy for small sale business in accordance with office procedures
2. Incorporated technology in small scale business growth in accordance with technological trends
3. Emerging issues and trends are considered in accordance with business growth strategy
4. Built audience interest in product/service according to growth strategy
5. Boosted cooperate communication according to business ***communication strategy***
 |

**RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range**  |
| 1. Business operations may include but not limited to:
 | * Purchasing
* Accounting/administrative
* Work production/operations/sales
* Marketing
 |
| 1. Internal control may include but not limited to:
 | * Accounting systems
* Financial statements/reports
* Cash management
* Human resource management
 |
| 1. Business Strategy may include but not limited to:
 | * Management of wastages
* Environmental Conservation
 |
| 1. Communication strategy may include but not limited to:
 | * Blue print of exchange of information
* Technology and exchange of information
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Marketing
* Advertising
* Basic bookkeeping
* Accounting
* Communication

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Generation and evaluation of business ideas
* Legal requirements for starting a small business
* SWOT/ PESTEL analysis
* Occupational Safety and Health
* Public relations concepts
* Business plan
* Business financing
* Marketing strategies
* Business management and control
* Production/ operation process
* Product promotion strategies
* Market and feasibility studies
* Business ethics
* Building customer relations
* Business models and strategies
* Types and categories of businesses
* Business internal controls
* Relevant national and local legislation and regulations
* Basic quality control and assurance concepts
* Building relations with customer and employees
* Building competitive advantage of the enterprise
* Business growth strategies

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |  |
| --- | --- | --- |
| 1. Critical aspects of Competency
 | Assessment requires evidence that the candidate:

|  |
| --- |
| 1. Demonstrated entrepreneurial skills
2. Demonstrate competencies to create a small-scale business
3. Demonstrated ability to conceptualize and plan a micro/small business
4. Grew customer base for the small-scale business
5. Demonstrated ability to manage/operate a micro/small-scale business
6. Demonstrated competencies to grow a micro/small-scale business
 |

 |
| 1. Resource Implications
 |

|  |
| --- |
| The following resources should be provided:  |

1. Assessment location
2. Case studies on micro/small-scale enterprises
3. Assessment materials
 |
| 1. Methods of Assessment
 | Competency in this unit may be assessed through:

|  |  |
| --- | --- |
| 1. Written tests
2. Observation
3. Oral questioning
4. Portfolio
5. Projects
 |  |

 |
| 1. Context of Assessment
 | Competency may be assessed 1. On the job
2. Off the job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE EMPLOYABILITY SKILLS

**UNIT CODE: POL/OS/HT/BC/05/4/A**

**UNIT DESCRIPTON**

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating critical safe work habits, demonstrating workplace learning and workplace ethics.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms are elaborated in the Range*** |
| 1. Conduct self-management
 | 1. Personal vision, mission and goals are formulated based on potential and in relation to organization objectives
2. Emotional intelligence is demonstrated as per workplace requirements.
3. Individual performance is evaluated and monitored according to the agreed targets.
4. Assertiveness is developed and maintained based on the requirements of the job.
5. Accountability and responsibility for own actions are demonstrated based on workplace instructions.
6. Self-esteem and a positive self-image are developed and maintained based on values.
7. Time management, attendance and punctuality are observed as per the organization policy.
8. Goals are managed as per the organization’s objective
9. Self-strengths and weaknesses are identified based on personal objectives
 |
| 1. Demonstrate critical safe work habits
 | 1. Stress is managed in accordance with workplace policy.
2. Punctuality and time consciousness is demonstrated in line with workplace policy.
3. Personal objectives are integrated with organization goals based on organization’s strategic plan.
4. ***Resources*** are utilized in accordance with workplace policy.
5. Work priorities are set in accordance to workplace goals and objectives.
6. Leisure time is recognized and utilized in line with personal objectives.
7. ***Drugs and substances of abuse*** are identified and avoided based on workplace policy.
8. HIV and AIDS prevention awareness is demonstrated in line with workplace policy.
9. Safety consciousness is demonstrated in the workplace based on organization safety policy.
10. ***Emerging issues*** are identified and dealt with in accordance with organization policy.
 |
| 1. Demonstrate workplace learning
 | * 1. Learning opportunities are sought and managed based on job requirement and organization policy.
	2. Improvement in performance is demonstrated based on courses attended.
	3. Application of learning is demonstrated in both technical and non-technical aspects based on requirements of the job
	4. Time and effort is invested in learning new skills based on job requirements
	5. Initiative is taken to create more effective and efficient processes and procedures in line with workplace policy.
	6. New systems are developed and maintained in accordance with the requirements of the job.
	7. Awareness of personal role in workplace ***innovation*** is demonstrated based on requirements of the job.
 |
| 1. Demonstrate workplace ethics
 | 1. Policies and guidelines are observed as per the workplace requirements
2. Self-worth and professionalism is exercised in line with personal goals and organizational policies
3. Code of conduct is observed as per the workplace requirements
4. Integrity is demonstrated as per legal requirement
 |

**RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Range** | **Variable** |
| 1. Personal objectives may include but not limited to:
 | * Long term
* Short term
* Broad
* Specific
 |
| 1. Feedback may include but not limited to:
 | * Verbal
* Written
* Informal
* Formal
 |
| 1. Team may include but not limited to:
 | * Small work group
* Staff in a section/department
* Inter-agency group
 |
| 1. Drug and substance abuse may include but not limited to:
 | * Alcohol
* Tobacco
* Miraa
* Over-the-counter drugs
* Cocaine
* Bhang
* Glue
 |
| 1. Emerging issues may include but not limited to:
 | * Terrorism
* Social media
* National cohesion
* Open offices
 |
| 1. Range of media for learning may include but not limited to:
 | * Mentoring
* peer support and networking
* IT and courses
 |
| 1. Innovation may include but not limited to:
 | * New ideas
* Original ideas
* Different ideas
* Methods/procedures
* Processes
* New tools
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Communication
* Interpersonal
* Critical thinking
* Observation
* Organizing
* Record keeping
* Problem solving
* Decision Making
* Resource utilization

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Work values and ethics
* Company policies
* Company operations, procedures and standards
* Occupational Health and safety procedures
* Fundamental rights at work
* Personal hygiene practices
* Workplace communication
* Concept of time
* Time management
* Decision making
* Types of resources
* Work planning
* Record keeping
* Workplace problems and how to deal with them
* Assertiveness
* Team work
* HIV and AIDS
* Drug and substance abuse
* Safe work habits
* Professional growth and development
* Technology in the workplace
* Emerging issues
	+ Social media
	+ Terrorism
	+ National cohesion

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical aspects of Competency
 | Assessment requires evidence that the candidate:* 1. Conducted self-management
	2. Demonstrated critical safe work habits
	3. Demonstrated workplace learning
	4. Demonstrated workplace ethics
 |
| 1. Resource Implications
 | The following resources should be provided:1. Access to relevant workplace where assessment can take place
2. Appropriately simulated environment where assessment can take place
 |
| 1. Methods of Assessment
 | Competency in this unit may be assessed through: 1. Oral questioning
2. Portfolio of evidence
3. Third Party Reports
4. Written tests
 |
| 1. Context of Assessment
 | Competency may be assessed 1. On-the-job
2. Off-the –job
3. During Industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

#

# DEMONSTRATE ENVIRONMENTAL LITERACY

**UNIT CODE: POL/OS/HT/BC/06/4/A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to demonstrate environmental literacy. It involves controlling environmental hazard, controlling environmental pollution, demonstrating sustainable resource use and evaluating current practices in relation to resource usage.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Control environmental hazard
 | * 1. Storage methods for environmentally hazardous materials are followed according to environmental regulations and OSHS.
	2. Disposal methods of hazardous wastes are followed according to environmental regulations and OSHS.
	3. ***PPE*** is used according to OSHS.
 |
| 1. Control environmental pollution
 | * 1. ***Environmental pollution*** ***control measures*** are compiled following standard protocol.
	2. Procedures for solid waste management are observed according Environmental Management and Coordination Act 1999
	3. Methods for minimizing noise pollution complied following environmental regulations.
 |
| 1. Demonstrate sustainable use of resource s
 | * 1. Methods for minimizing wastage are complied with.
	2. ***Waste management procedures*** are employed following principles of 3Rs (Reduce, Reuse, Recycle)
	3. Methods for economizing or reducing resource consumption are practiced.
 |
| 1. Evaluate current practices in relation to resource usage
 | * 1. Information on resource efficiency ***systems and procedures*** are collected and provided as per work groups/sector
	2. ***Current resource usage*** is measured and recorded as per work group/sector
	3. Current purchasing strategies are analyzed and recorded according to industry procedures.
	4. Current work processes to access information and data is analyzed following enterprise protocol.
 |
| 1. 5. Identify environmental legislations/conventions for environmental concerns
 | 1. Environmental legislations/conventions and local ordinances are identified according to the different environmental aspects/impact
2. Industrial standard/environmental practices are described according to the different environmental concerns
 |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. PPE may include but are not limited to:
 | * Masks
* Gloves
* Goggles
* Safety hat
* Overall
* Hearing protector
* Safety boots
 |
| 1. Environmental pollution control measures may include but are not limited to:
 | * Methods for minimizing or stopping spread and ingestion of airborne particles
* Methods for minimizing or stopping spread and inhaling gases and fumes
* Methods for minimizing or stopping spread and ingestion of liquid wastes
 |
| 1. Waste management procedures may include but are not limited to:
 | * Sorting
* Storing of items
* Recycling of items
* Disposal of items
* Handling
* Transport
 |
| 1. Current resources usage may include but are not limited to:
 | * Electric
* Water
* Fuel
* Telecommunications
* Supplies
* Materials
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Measuring
* Recording
* Analytical
* Monitoring
* Writing
* Communication

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Storage methods of environmentally hazardous materials
* Disposal methods of hazardous wastes
* Usage of PPE Environmental regulations
* OSHS
* Types of pollution
* Environmental pollution control measures
* Different solid wastes
* Solid waste management
* Different noise pollution
* Methods of minimizing noise pollution
* Solid Waste Act
* Methods of minimizing wastage
* Waste management procedures
* Economizing of resource consumption
* Principle of 3Rs
* Types of resources
* Techniques in measuring current usage of resources
* Calculating current usage of resources
* Types of workplace environmental hazards
* Environmental regulations
* Environmental regulations applying to the enterprise.
* Procedures for assessing compliance with environmental regulations.
* 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 current work processes to access information and data Analysis of data and information

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency
 | Assessment requires evidence that the candidate:1. Controlled environmental hazards
2. Controlled environmental pollution
3. Demonstrated sustainable resource use
4. Evaluated current practices in relation to resource usage
 |
| 1. Resource Implications
 | The following resources should be provided:* 1. Workplace with storage facilities
	2. Tools, materials and equipment relevant to the tasks (e.g. cleaning tools, cleaning materials, trash bags, etc.)
	3. PPEs
	4. Manuals and references
	5. Legislation, policies, procedures, protocols and local ordinances relating to environmental protection
	6. Case studies/scenarios relating to environmental Protection
 |
| 1. Methods of Assessment
 | Competency in this unit may be assessed through:1. Observation
2. Oral questioning
3. Written tests
4. Third party reports
5. Portfolio
 |
| 1. Context of Assessment
 | Competency may be assessed1. On the job
2. Off the job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# DEMONSTRATE OCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE: POL/OS/HT/BC/07/4/A**

**UNIT DESCRIPTION**

This unit specifies the competencies required to practice safety and health and comply with OSH requirements relevant to work. It involves observing workplace procedures for hazards and risk prevention and participating in arrangements for workplace safety and health maintenance.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms*** ***are elaborated in the Range*** |
| 1. Adhere to workplace procedures for hazards and risk prevention
 | 1. Arrangement of work area and items in accordance with

workplace procedures requirements 1. Work standards and procedures are followed based on instructions
2. ***Prevention and control measures*** are applied based on instructions
 |
| 1. Participate in arrangements for workplace safety and health maintenance
 | 1. Orientations on ***OSH requirements and regulations*** is undertaken in line with policy.
2. Feedback on occupational health and safety are provided as per workplace instructions.
3. Workplace procedures for reporting hazards, incidents, injuries and sickness are adhered to as per workplace policy.
4. ***OSH-related training needs*** are identified and proposed as per workplace policy.
 |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Prevention and control measures may include but are not limited to:
 | * Eliminate the hazard
* Isolate the hazard
* Substitute the hazard with a safer alternative
* Use administrative controls to reduce the risk
* Use engineering controls to reduce the risk
* Use personal protective equipment
* Safety, Health and Work Environment Evaluation
* Periodic and/or special medical examinations of workers
 |
| 1. Safety gears /PPE (Personal Protective Equipment’s) may include but are not limited to:
 | * 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
 |
| 1. Incidents and emergencies may include but are not limited to:
 | * Chemical spills
* Equipment/vehicle accidents
* Explosion
* Fire
* Gas leak
* Injury to personnel
* Structural collapse
* Toxic and/or flammable vapors emission.
 |
| 1. OSH requirements / regulations may include but are not limited to:
 | * Building code
* Permit to Operate
 |
| 1. OSH-related trainings may include but are not limited to:
 | * Safety Orientations relevant to tasks
* Safe and Correct Operation of Tools and Equipment
* Health Orientations/trainings
* Prevention and Control of OSH Hazards in the workplace
* Chemical Handling
* Safety Trainings
* Prevention and Control of Work-related Injuries and Illness
* Basic First-aid Trainings
* Emergency Response Trainings
* Trainings on use of fire-extinguisher
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required Skills**

The individual needs to demonstrate the following skills:

* Communication
* Knowledge management
* Collaborating
* Interpersonal
* Troubleshooting
* Critical thinking
* Observation

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* General OSH principles and legislations
* Principles of good housekeeping (5S)
* Company/workplace policies/ guidelines
* Standards and safety requirements of work process and procedures
* Standard Workplace emergency plan and procedures
* Safety and health requirements of tasks
* Workplace guidelines on providing feedback on OSH and security concerns
* OSH regulations
* Hazard control procedures
* OSH trainings relevant to work

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency
 | 1. Assessment requires evidence that the candidate:
2. Arranged work area and items in accordance with
3. workplace procedures requirements
4. Followed work standards and procedures based on instructions
5. Applied ***Prevention and control measures*** based on instructions
6. Undertook orientations on ***OSH requirements and regulations*** in line with policy.
7. Provided feedback on occupational health and safety as per workplace instructions.
8. Adhered to workplace procedures for reporting hazards, incidents, injuries and sickness to as per workplace policy.
9. Identified and proposed ***OSH-related training needs*** as per workplace policy.
 |
| 1. Resource Implications
 | The following resources should be provided:1. Access to relevant workplace where assessment can take place
2. Appropriately simulated environment where assessment can take place
 |
| 1. Methods of Assessment
 | Competency in this unit may be assessed through: 1. Oral questioning
2. Portfolio of evidence
3. Third Party Reports
4. Written tests
 |
| 1. Context of Assessment
 | Competency may be assessed 1. On-the-job
2. Off-the –job
3. During Industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

# CORE UNITS OF LEARNING

# HANDLE EGGS FOR HATCHING

**UNIT CODE:** **POL/OS/HT/CR/01/4/A**

**UNIT DESCRIPTION:**

This unit specifies the competencies required to handle eggs for hatching. It involves grading of eggs for hatching, storage of fumigated eggs and entry of hatchery records.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms are elaborated in the range.*** |
| 1. Grade eggs for hatching

   | 1. ***Personal Protection Equipment and Apparel (PPEs)*** are identified and donned in accordance with ***poultry production manual (PPM)*** and work place procedures
2. Hatching eggs are offloaded into the sorting room according to PPM and ***hatching egg handling guidelines***
3. Hatching eggs are sorted into storage trays in accordance with the PPM and hatching egg handling guidelines
4. Rejected eggs are disposed in accordance with the *e****nvironmental protection regulations*** and work place procedures
 |
| 1. Store fumigated eggs
 | 1. Hatchery biosecurity measures are observed and adhered to according to PPM guidelines and work place procedures
2. Sorted and accepted eggs are fumigated in the fumigation chamber in accordance with the PPM and hatching egg handling guidelines
3. Fumigated eggs are stored at a temperature of between 12oC and 18oC awaiting setting in accordance with the PPM and hatching egg handling guidelines
 |
| 1. Enter hatchery records
 | 1. Number of eggs received, source, type and date received are entered into the hatchery inventory record in accordance with work place procedures
2. Number of eggs broken on reception, rejected, accepted / stored are entered into the hatchery inventory record in accordance with work place procedures
 |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Poultry production manual (PPM) may include but limited to:
 | * National Poultry Development Programme Manual
* Breeder’s manuals by breeders like Cobb and Issa Brown
 |
| 1. Personal Protection Equipment and Apparel (PPE) may include but limited to:
 | * Overalls
* Gumboots
* Nose and mouth mask
* Goggles
* Gloves
* Head gear
 |
| 1. Hatching egg handling guidelines may include but limited to:
 | * Hand sanitization or wearing gloves whenever handling eggs
* Free from communicable diseases
* Handling eggs with care
* Avoiding wetting the eggs
 |
| 1. Environmental protection regulations may include but limited to:
 | * Public Health Act
* EMCA 1999
* OSH Act 2007
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required skills**

The individual needs to demonstrate the following skills:

* Communication
* Egg handling
* Egg sorting
* Numeracy
* Observation
* Record keeping
* Weighing

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Egg sizes and shape
* Egg handling
* Egg sorting
* Egg storage
* Record keeping
* Refrigeration methods
* Types of hatchery records
* Personal hygiene

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency
 | Assessment requires evidence that the candidate:* 1. Handled hatching eggs with care in accordance with hatching egg handling regulations
	2. Sorted hatching eggs in accordance with the PPM and hatching egg handling guidelines
	3. Stored hatching eggs in accordance with the PPM and hatching egg handling guidelines
	4. Entered egg records accurately in accordance with work place procedures
	5. Observed occupational safety and health measures in the working environment
	6. Observed laid down environmental protection measures at the work place
 |
| 1. Resource Implications
 | The following resources must be provided:* 1. Assessment location / workplace
	2. Personal Protective Equipment and Apparel
	3. Assessment materials
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Observation
	2. Written tests
	3. Oral questioning
	4. Third party report
 |
| 1. Context of Assessment
 | Competency may be assessed on the job, off the job or during industrial attachment. Off the job assessment must be undertaken in a closely simulated workplace environment. |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended.  |

# HATCH POULTRY EGGS

**UNIT CODE:** **POL/OS/HT/CR/02/4/A**

**UNIT DESCRIPTION:**

This unit specifies the competencies required to hatch poultry eggs. It involves setting poultry eggs, monitoring egg hatching, transfer of hatched chicks and entry of hatchery records.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms are elaborated in the range.*** |
| 1. Set poultry eggs
 | 1. ***Personal Protection Equipment and Apparel (PPEs)*** are identified and donned in accordance with ***poultry production manual (PPM)*** and work place procedures
2. Hatchery biosecurity measures are observed and adhered to according to PPM guidelines and work place procedures
3. Hatching eggs are retrieved from cold store into the egg traying room using recommended ***hatching egg handling regulations***
4. ***Incubation chamber parameters*** are set according to incubator manufacturers guidelines, PPM regulations and hatchery SOPs
5. Hatching eggs are transferred into setting trays with broad ends facing up following recommended hatching egg handling regulations
6. Setting trays with hatching eggs are loaded onto setting trolleys following recommended hatching egg handling regulations
7. Loaded setting trolleys or trays are driven / pushed into incubation chamber and locked in for incubation.
 |
| 1. Monitor egg hatching
 | 1. Eggs are removed from the incubation chamber on the 18th day post setting as per hatching egg handling regulations
2. Eggs are candled to remove non-fertile ones and those with dead embryos in accordance with procedures in the PPM
3. Fertile eggs with developing embryos are transferred into hatching baskets in accordance with procedures in the PPM
4. Loaded hatching baskets are transferred into hatching chamber/machine according to procedures in the PPM
5. Hatching process is monitored from the 20th day onwards for about 33 hours in accordance with procedures in the PPM
 |
| 1. Transfer hatched chicks
 | 1. Hatching baskets with chicks, un-hatched eggs and hatching debris are pulled from the hatching chamber/machine on the 21st day according to procedures in the PPM
2. Hatched, dry and healthy chicks are removed from the hatching baskets and transferred to chick cartons/crates as per procedures in the PPM
3. Hatchery wastes are disposed according to *e****nvironmental protection regulations*** and work place procedures
 |
| 1. Enter hatchery records
 | 1. Number of eggs set and candled are entered into the hatchery inventory records in accordance with work place procedures
2. Number of fertile and rejected eggs are entered into the hatchery inventory record in accordance with work place procedures
3. Dates of setting, candling and transfer to hatching chamber are recorded in accordance with work place policy
 |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. PPEs may include but not limited to:
 | * Overalls
* Gumboots
* Nose and mouth mask
* Goggles
* Gloves
* Head gear
 |
| 1. Poultry production manuals (PPM)

may include but not limited to:  | * National Poultry Development Programme Manual
* Breeder’s manuals by breeders like Cobb and Issa Brown
 |
| 1. Hatching egg handling guidelines may include but not limited to:
 | * Hand sanitization or wearing gloves whenever handling eggs
* Free from communicable diseases
* Handling eggs with care
* Avoiding wetting the eggs
 |
| 1. Incubation chamber parameters may include but not limited to:
 | * Temperature
* Humidity
* Air quality and flow
* Egg inclination
 |
| 1. Environmental protection regulations may include but not limited to:
 | * Public Health Act
* EMCA 1999
* OSH Act 2007
 |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required skills**

The individual needs to demonstrate the following skills:

* Chick handling
* Cleaning
* Communication
* Egg handling
* Observation
* Operation of incubation and hatching machines
* Record keeping

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Chick development
* Chick environmental physiology
* Chick weighing
* Chick welfare
* Cleaning, sanitization and disinfection procedures
* Egg candling techniques
* Egg handling
* Egg incubation technology
* Egg turning
* Hatchery air conditioning
* Hatchery biosecurity measures
* Hatchery record keeping
* Hatching egg sorting
* Hatching process
* Heat transfer
* Incubator environment
* Waste disposal maceration and rendering techniques
* Occupational safety and health
* Personal hygiene and public health
* Types of cleaning agents, sanitizers and disinfectants
* Types of hatchery records

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency
 | Assessment requires evidence that the candidate:* 1. Implemented hatchery biosecurity measures according to standard operating procedures (SOP)
	2. Handled eggs according to hatching egg handling regulations
	3. Set and monitored the correct incubator parameters according to the PPM and manufacturer’s guidelines
	4. Handled chicks safely in accordance with PPM guidelines
	5. Disposed hatchery waste following recommended environmental protection regulations
	6. Entered recommended hatchery records accurately according to work place procedures
 |
| 1. Resource Implications
 | The following resources **MUST** be provided:* 1. Assessment location / workplace
	2. Personal Protective Equipment and Apparel
	3. Assessment materials
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Observation
	2. Written tests
	3. Oral questioning
	4. Third party report
 |
| 1. Context of Assessment
 | Competency may be assessed on the job, off the job or during industrial attachment. Off the job assessment must be undertaken in a closely simulated workplace environment. |
| 1. Guidance information for assessment
 | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended.  |

# HANDLE HATCHED CHICKS

**UNIT CODE:** **POL/OS/HT/CR/03/4/A**

**UNIT DESCRIPTION:**

This unit specifies the competencies required to handle hatched chicks. It involves performing chick sexing, trimming chick beaks, monitoring chick health, packaging poultry chicks and managing unwanted chicks. It also entails managing hatchery biosecurity measures and maintaining hatchery records.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**These are assessable statements which specify the required level of performance for each of the elements.***Bold and italicized terms are elaborated in the range.*** |
| 1. Perform chick sexing
 | 1. Hatched ***chicks are*** ***assessed*** to distinguish males from females in accordance with organizational preferences and market demands
2. Males are separated from females in accordance with work place procedures
 |
| 1. Trim chick beaks
 | 1. Beak trimming equipment is identified as per ***Poultry Production Manual (PPM)***
2. Chick beaks trimmed as per hatchery practice
 |
| 1. Monitor chick health
 | 1. Vaccination ***preparations*** are done in accordance with Poultry Production Manual (PPM) and vaccine manufacturer’s guidelines
2. Chick vaccines are administered in accordance with the developed schedule
3. Vaccinated chicks are observed to ascertain vaccine intake and check for abnormal reactions in accordance with PPM and vaccine manufacturer’s guidelines
4. Chicks are observed for signs of disease, deformities or abnormal behavior in accordance with the PPM
5. Unhealthy chicks are isolated as per the PPM
6. A veterinarian is consulted immediately for advice as per the PPM requirements
 |
| 1. Package poultry chicks
 | 1. Labeled chick packaging cartons or crates are identified and gathered in accordance with animal welfare regulations, PPM guidelines and work place procedures
2. Poultry chicks are transferred into packaging crates or cartons in accordance with animal welfare regulations, PPM guidelines and work place procedures
3. Crates and cartons with chicks are sealed in readiness transportation in accordance with animal welfare regulations, PPM guidelines and work place procedures
4. Chicks are transported in accordance with animal welfare standards
 |
| 1. Manage unwanted chicks
 | 1. ***Unwanted chicks*** are identified and separated for disposal according to market demand and designed biosecurity measures
2. Unwanted chicks are packaged and dispatched to interested clients based on placed orders and work place procedures
 |
| 1. Manage hatchery biosecurity measures
 | 1. Biosecurity structures and equipment are ***operationalized*** in accordance with the PPM
2. Standard operational procedures are posted at strategic points in the hatchery unit according to GMP
3. Human and traffic movement into the hatchery unit is ***restricted and monitored*** according to GMP and work place policy
4. Sanitization and ***PPEs*** facilities are provided for hatchery unit personnel according to GMP and work place policy
5. Personal Protection Equipment and Apparel are identified, gathered and donned based on job requirements
6. Occupational safety and health procedures are adhered to according to work place procedures
7. Environmental protection measures are observed according to ***environmental protection regulations*** and work place procedures
8. Hatchery buildings and equipment are cleaned, disinfected and fumigated according to GMP regulations and work place policy
9. ***Hatchery waste*** is disposed into waste pits after passing through maceration tanks or rendering units according to work place policy, GMP and environment protection regulations
 |
| 1. Maintain hatchery records
 | 1. Number of male/female chicks are entered in accordance with wok place procedures
2. Chick vaccination details are recorded as per PPM guidelines and farm policies
3. Chick health records are entered in accordance with work place procedures
4. Details of packaged chicks are entered in accordance with work place procedures
5. Records per every hatch are made as per firm practice
 |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Chicks are assessed may include but not limited to:
 | Determination of sex of chick through;* Color observation
* Vent observation
* Feather length observation
* DNA sequence
 |
| 1. Poultry Production Manual ***(PPM)*** may include but not limited to:
 | * National Poultry Development Programme Manual
* Breeder’s manuals by breeders like Cobb and Issa Brown
 |
| 1. Preparations may include but not limited to:
 | Activities that are carried out before, during and after vaccination;* Provision of anti-stress nutritional premixes
* Feed and water withdrawal
* Confirmation of bird numbers to determine dosage
* Provision of disinfectant free water
* Positioning vaccine receptacles in the poultry house for oral vaccines
* Confine and restrain poultry for injectable and ocular-nasal vaccines
 |
| 1. Unwanted chicks may include but not limited to:
 | * Culled chicks
* Unhealthy chicks
* Deformed chicks
* Males in commercial layers
 |
| 1. Vaccination details may include but not limited to:
 | * Type of vaccine
* Type of disease vaccinated against
* Age of poultry
* Date and time of vaccination
* Date of manufacture and expiry of vaccine
* Vaccine source and batch number
* Route of vaccine administration (IM, wing stab, sub cutaneous, intra nasal, intra ocular or spray)
* Number of birds vaccinated
* Identification of birds (flock, type, breed)
 |
| 1. Operationalized may include but not limited to:
 | * Placing disinfectants in foot baths and spray jet tanks
* Placing fumigants in fumigation chamber tanks
* Pumping disinfection spray jets
 |
| 1. Restricted and monitored may include but not limited to:
 | * Placing screening barriers at sentry gates
* Implementing visitor identification systems e.g. badges
* Having visitors to fill a questionnaire indicating previous visits to other poultry farms in the past one week
* Barring vehicles and unauthorized persons from accessing poultry houses and surrounding vicinities
 |
| 1. PPE may include but not limited to:
 | * Overalls
* Gumboots
* Nose and mouth mask
* Goggles
* Gloves
* Head gear
 |
| 1. Environment protection regulations may include but not limited to:
 | Guidelines designed and enforced by: * National Environmental Management Authority
* Ministry of Health
 |
| 1. Hatchery waste may include but not limited to:
 | * Fluff
* Contaminated eggs
* Hatched egg shell debris
* Pipped chicks (dead in shell)
* Unhatched eggs
* Dead chicks
* Meconium droppings
 |
|  |  |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required skills**

The individual needs to demonstrate the following skills:

* + Chick handling
	+ Cleaning
	+ Colour sexing
	+ Communication
	+ Feather length sexing
	+ Observation
	+ Record keeping
	+ Vaccination
	+ Vent sexing

**Required knowledge**

The individual needs to demonstrate knowledge of:

* + Chick environmental physiology
	+ Chick packaging
	+ Chick vaccination at the hatchery
	+ Chick vaccination methods and routes
	+ Chick welfare
	+ Cleaning, sanitization and disinfection procedures
	+ Early chick feeding
	+ Hatchery air conditioning
	+ Hatchery biosecurity measures
	+ Hatchery record keeping
	+ Heat transfer
	+ Humane killing
	+ Waste disposal maceration and rendering techniques
	+ Methods of chick sexing
	+ Mode of disease and parasite spread
	+ Occupational safety and health
	+ Personal hygiene and public health
	+ Types of cleaning agents, sanitizers and disinfectants
	+ Types of early chick vaccines
	+ Types of hatchery records
	+ Vaccination and vaccine records
	+ Vaccine care and handling
	+ Vaccine reaction sites

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency
 | Assessment requires evidence that the candidate:1. Implemented hatchery biosecurity measures according to standard operating procedures (SOP)
2. Identified sex of chicks using appropriate method of sexing
3. Implemented chick vaccination programme
4. Handled chicks safely in accordance with PPM guidelines
5. Disposed hatchery waste following recommended environmental protection regulations
6. Kept recommended hatchery records according to work place procedures
 |
| 1. Resource Implications
 | The following resources must be provided:* 1. Assessment location / workplace
	2. Personal Protective Equipment and Apparel
	3. Assessment materials
 |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Observation
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	3. Oral questioning
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| 1. Context of Assessment
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