****

**THE REPUBLIC OF KENYA**

**COMPETENCY BASED CURRICULUM**

**FOR**

**POULTRY HATCHERY OPERATIONS**

**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 with agriculture sector being the leading sector contributing 27.3% to the Gross Domestic Product (GDP) in 2014. In this regard; crops, animal production, fishing and aquaculture contributed 19.7%, 4.9% and 0.8% of the GDP respectively totalling 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 current education system emphasizes 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 agriculture training curriculum, its delivery and assessment. These reforms can only be achieved through Competency Based Education and Training (CBET) approach. The reforms demands 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.

This curriculum for the poultry subsector presents us with a unique approach to training which will allow the trainees to gain skills required in their occupation/jobs. It will also allow them to train on their areas of interest without necessarily undertaking all the modules in the curriculum; this permits flexibility in training with multiple entries and exits. It is therefore the curriculum that will revolutionalize 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 high population density, diminishing land sizes, and the escalating un-employment levels in formal sector. Poultry farming contributes to the lives of 21 million Kenyans and 6.1% of 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 fowls, Quails and turkeys comprise about 2.2% of the total poultry population .The industry is therefore 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 Analysis Chart and Occupation standards were developed in collaboration with the industry players and guided by Curriculum Development Assessment and Certification Council (CDACC). Eleven Jobs/Occupations were identified,

Job Analysis Charts were further analysed through Task Analysis and the information generated used to develop Occupation Standards. The information generated from the task analysis was also used to develop the Units of competences for each job. The result was to the realization of the curriculum for the poultry subsector. This was done by experts drawn from Technical training institutions, Universities and industry representatives.

The curriculum was presented to the Poultry Sector Skills Advisory Committee (PSSAC) who made recommendations for improvement of the curriculum and adopted the curriculum for its progression to the next stages of approval by the CDACC. The curriculum development process was a rigorous exercise that involved wide consultations with various stakeholders 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 deliver Competence Based Training and produce competent graduates that can employed, entrepreneurs or self-employed in the poultry industry.

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

**CHAIRPERSON**

**TVET CDACC.**

# ACKNOWLEDGEMENTS

This Curriculum was developed through the combined efforts of different stakeholders in the poultry subsector namely the state department of livestock, private practitioners and regulators. Institutions in the State Departments of Livestock led the process of this curriculum development and key among them were the Dairy Training Institute (DTI), and, Animal Health and Industry Training Institutes (AHITIs). We wish to acknowledge the invaluable contribution received from the private sector industry players who provided inputs towards the development of occupational standards against which this curriculum was developed.

With the Occupational Standards in hand, the stakeholders provided technical inputs towards the development and completion of this curriculum. 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 curriculum 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 this 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.

**COUNCIL SECRETARY/CEO**

**TVET CDACC**

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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 /CU/ HT /BC /01 /4/ A**

Industry or sector

Occupational Standards

Occupational area

Type of competency

Competency number

Competency level

Version control

### 

# COURSE OVERVIEW

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

The units of learning comprising Poultry Hatchery Operations Level 4 qualification include the following:

**Basic Units of Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** | **Credit factor** |
| POL/CU/HT/BC/01/4/A | Communication Skills | 20 | 2.0 |
| POL/CU/HT/BC/02/4/A | Numeracy Skills | 25 | 2.5 |
| POL/CU/HT/BC/03/4/A | Digital Literacy | 35 | 3.5 |
| POL/CU/HT/BC/04/4/A | Entrepreneurial Skills | 60 | 6.0 |
| POL/CU/HT/BC/05/4/A | Employability Skills | 30 | 3.0 |
| POL/CU/HT/BC/06/4/A | Environmental Literacy | 20 | 2.0 |
| POL/CU/HT/BC/07/4/A | Occupational Safety and Health Practices | 20 | 2.0 |
| **Total** | | **210** | **21** |

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** |  |
| POL/CU/HT/CR/01/4/A | Handling of Eggs for Hatching | 112 | 11 |
| POL/CU/HT/CR/02/4/A | Hatching Poultry Eggs | 96 | 10 |
| POL/CU/HT/CR/03/4/A | Handling Hatched Chicks | 112 | 11 |
|  | Industrial Attachment | 240 | 24 |
| **Total** | | 640 | **64** |
| **Grand total** | | 850 | **85** |

**Industrial Attachment**

It is envisaged that the trainee will have undergone a field training and assessment with a recognized poultry hatchery farm as a prerequisite for completion of this training course.

**Entry Requirements**

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

1. Broiler Production Operator, Artisan Certificate Level 3

**Or**

1. Layer Production Operator, Artisan Certificate Level 3

**Or**

1. *Kienyeji* Chicken Production Operator, Artisan Certificate Level 3

**Or**

1. Attained KCSE certificate

**Or**

1. Equivalent qualifications as determined by Kenya National Qualifications Framework (KNQF)

**Trainer qualification**

A trainer for this course should have a higher qualification than the level 4.

**Assessment**

The course will be assessed at two levels: internally and externally. Internal assessment is continuous and is conducted by the trainer who is monitored by an accredited internal verifier while external assessment is conducted by accredited external assessors appointed by TVET CDACC.

**Certification**

A candidate will be issued with a Certificate of Competency on demonstration of competence in a unit of competency. To attain a National Certificate in Poultry Hatchery Operation

Level 4, the candidate must demonstrate competence in all the units of competency as given in qualification pack. These certificates will be issued by TVET CDACC in conjunction with training provider.

# BASIC UNITS OF LEARNING

# COMMUNICATION SKILLS

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Communication Skills

**Duration of Unit:** 20 Hours

**Unit Description**

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

**Summary of Learning Outcomes**

1. Obtain and convey workplace information
2. Complete relevant work-related documents
3. Communicate information about workplace processes
4. Lead workplace discussions
5. Identify and communicate issues arising in the workplace

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Obtain and convey workplace information | * Communication process * Modes of communication * Medium of communication * Effective communication * Barriers to communication * Flow of communication * Sources of information * Types of questions * Organizational policies * Workplace etiquette * Ethical work practices in handling communication | * Interview * Third party reports |
| 1. Complete relevant work-related documents | * Types and purposes of workplace documents and forms * Methods used in filling forms and documents * Recording workplace data * Process of distributing workplace forms and documents * Report writing * Types of workplace reports | * Interview * Third party reports |
| 1. Communicate information about workplace processes | * Communication process * Modes of communication * Medium of communication * Effective communication * Barriers to communication * Flow of communication * Sources of information * Organizational policies * Organization requirements for written and electronic communication methods * Report writing * Effective questioning techniques (clarifying and probing) * Workplace etiquette * Ethical work practices in handling communication | * Interview * Portfolio |
| 1. Lead workplace discussion | * Methods of discussion e.g.   + Coordination meetings   + Toolbox discussion   + Peer-to-peer discussion * Solicitation of response | * Interview * Third party reports |
| 1. Identify and communicate issues arising in the workplace | * Identification of problems and issues * Organizing information on problems and issues * Relating problems and issues * Communication barriers affecting workplace discussions | * Interview * Portfolio |

**Suggested Methods of Instruction**

* Direct instruction
* Demonstration
* Practice assignment
* Discussion
* Role play
* Brainstorming

**Recommended Resources**

* Desktop computers/laptops
* Internet connection
* Projectors
* Telephone
* Report writing templates

# NUMERACY SKILLS

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

**Relationship to Occupational Standards:**

This unit addresses the Unit of Competency: Demonstrate Numeracy Skills

**Duration of Unit:** 25hours

**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.

**Summary of Learning Outcomes**

1. Identify and use whole numbers and simple fractions, decimals and percentages for work
2. Identify, measure and estimate familiar quantities for work
3. Read and use familiar maps, plans and diagrams for work
4. Identify and describe common 2D and some 3D shapes for work
5. Construct simple tables and graphs for work using familiar data
6. Identify and interpret information in familiar tables, graphs and charts for work

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Identify and use whole numbers and simple fractions, decimals and percentages for work | * Whole numbers * Simple fractions * Decimals * Percentages * Sizes * Problem solving methods * Calculations using the 4 operations * Recording and communicating numerical information | * Written * Practice assignments |
| 2. Identify, measure and estimate familiar quantities for work | * Measurement information * Units of measurement * Estimate familiar and simple amounts * Selection of appropriate measuring equipment * Calculate using familiar units of measurement * Check measurements and results against estimates * Using informal and some formal mathematical and general language * Record or report results | * Written * Practice assignments |
| 3. Read and use familiar maps, plans and diagrams for work | * Maps, plans and diagrams * Locate items and places in familiar maps, plans and diagrams * Recognize common symbols and keys in familiar maps, plans and diagrams * Direction and location of objects, or route or places * Use of informal and some formal oral mathematical language and symbols | * Practical test * Written |
| 4. Identify and describe common 2D and some 3D shapes for work | * Common 2D shapes and 3D shapes * Classification of common 2D shapes and designs * Description of Use informal and some formal language to describe common two-dimensional shapes and some common three-dimensional shapes * Construction of common 2D shapes * Match common 3D shapes to their 2D sketches or nets | * Written * Practical test |
| 5. Construct simple tables and graphs for work using familiar data | * Types of graphs * Determination of data to be collected * Selection of data collection method * Collection of data * Determination of variables from the data collected * Order and collate data * Construct a table and enter data * Construct a graph using data from table * Check results * Report or discuss graph information related to work using informal and some formal mathematical and general language | * Written * Practical test |
| 6. Identify and interpret information in familiar tables, graphs and charts for work | * Tables construction and labeling * i.e. title, headings, rows and columns * Interpreting information and data in simple tables * Relaying information of relevant workplace tasks on/in a table * Identify familiar graphs and charts in familiar texts and contexts * Locate title, labels, axes, scale and key from familiar graphs and charts * Identify and interpret information and data in familiar graphs and charts * Relate information to relevant workplace tasks | * Written * Practical test |

**Suggested Methods of Instruction**

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

**Recommended Resources**

* Computers
* Stationery
* Charts
* Video clips
* Audio tapes
* LCD projectors
* Standard operating and/or other workplace procedures manuals
* Specific job procedures manuals
* Projectors
* Writing boards
* Mathematical tables

# DIGITAL LITERACY

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Digital Literacy

**Duration of Unit:** 35 hours

**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.

**Summary of Learning Outcomes**

1. Identify computer software and hardware
2. Apply security measures to data, hardware and software
3. Apply computer software in solving tasks
4. Apply internet and email in communication at workplace

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Identify computer hardware and software | * Meaning of a computer * Functions of a computer * Components of a computer * Classification of computers | * Written tests * Oral * Observation |
| 1. Apply security measures to data, hardware and software | * Data security and control * Security threats and control measures * Types of computer crimes * Detection and protection against computer crimes | * Written tests * Oral presentation * Observation * Projects |
| 1. Apply computer software in solving tasks | * Operating system * Word processing * Spread sheets * Data base | * Oral questioning * Observation * Project |
| 1. Apply internet and email in communication at workplace | * Computer networks * Uses of internet * Electronic mail (e-mail) concept | * Oral questioning * Observation * Oral presentation * Written report |

**Suggested Methods of Instruction**

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

**Recommended Resources**

* Desktop computers
* Laptop computers
* Other digital devices
* Printers
* Storage devices
* Internet access
* Computer software

# ENTREPRENEURIAL SKILLS

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

**Relationship to occupational standards**

This unit addresses the Unit of Competency: Demonstrate Entrepreneurial Skills

**Duration of unit:** 60 hours

**Unit description**

This unit covers the competencies required for creating and maintaining small scale business, establishing small business customer base, managing and growing a micro/small-scale business.

**Summary of Learning Outcomes**

1. Create and maintain small scale business
2. Establish small scale business customer base
3. Manage small scale business
4. Grow/expand small scale business

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Create and maintain small scale business | * Starting a small business * Legal regulatory requirements in starting a small business * SWOT/ PESTEL analysis * Conducting market/industry survey * Generation and evaluation of business ideas * Matching competencies with business opportunities * Forms of business ownership * Location of a small business * Legal and regulatory requirement * Resources required to start a small business * Common terminologies in entrepreneurship * Entrepreneurship in national development * Self-employment * Formal and informal employment * Entrepreneurial culture * Myths associated with entrepreneurship * Types, characteristics, qualities & role of entrepreneurs * History, development and importance of entrepreneurship * Theories of entrepreneurship * Quality assurance for small businesses * Policies and procedures on occupational safety and health and environmental concerns | * Individual/group assignments * projects * Written * Oral |
| 1. Establish small scale business customer base | * Good staff/workers and customer relations * Marketing strategy * Identifying and maintain new customers and markets * Product/ service promotions * Products / services diversification * SWOT / PESTEL analysis * Conducting a business survey * Generating Business ideas * Business opportunities | * Individual/group assignments * projects * Written * Oral |
| 1. Manage small scale business | * Organization of a small business * Small business’ business plan * Marketing for small businesses * Managing finances for small business * Production/ operation process for goods/services * Small business records management * Book keeping and auditing for small businesses * Business support services * Small business resources mobilization and utilization * Basic business social responsibility * Management of small business * Word processing concepts in small business management * Computer application software * Monitoring and controlling business operations | * Oral * Individual/group assignments * projects * Written |
| 1. Grow/expand small scale business | * Methods of growing small business * Resources for growing small business * Small business growth plan * Computer software in business development * ICT and business growth | * Individual/group assignments * projects * Written |

**Suggested Methods of Instruction**

* Instructor led facilitation of theory
* Demonstration by trainer
* Practice by trainee
* Role play
* Case study

**Recommended Resources**

* Case studies for small businesses
* Business plan templates
* Lap top/ desk top computer
* Internet
* Telephone
* Writing materials

# EMPLOYABILITY SKILLS

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Employability Skills

**Duration of Unit:** 30 hours

**Unit Description**

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.

**Summary of Learning Outcomes**

1. Conduct self-management
2. Demonstrate critical safe work habits
3. Demonstrate workplace learning
4. Demonstrate workplace ethics

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Conduct self-management | * Self-awareness * Formulating personal vision, mission and goals * Strategies for overcoming life challenges * Emotional intelligence * Assertiveness * Expressing personal thoughts, feelings and beliefs * Developing and maintaining high self-esteem * Developing and maintaining positive self-image * Articulating ideas and aspirations * Accountability and responsibility * Good work habits * Self-awareness * Self-development * Financial literacy * Healthy lifestyle practices | * Written tests * Oral questioning * Portfolio of evidence * Third party report |
| 1. Demonstrate critical safe work habits | * Stress and stress management * Punctuality and time consciousness * Interpersonal communication * Sharing information * Leisure * Integratingpersonal objectives into organizational objectives * Resources utilization * Setting work priorities * HIV and AIDS * Drug and substance abuse * Handling emerging issues | * Written tests * Oral questioning * Portfolio of evidence * Third party report |
| 1. Demonstrate workplace learning | * Personal training needs identification and assessment * Managing own learning * Contributing to the learning community at the workplace * Cultural aspects of work * Variety of learning context * Application of learning * Safe use of technology * Identifying opportunities * Workplace innovation * Performance improvement * Handling emerging issues * Future trends and concerns in learning | * Written tests * Oral questioning * Portfolio of evidence * Third party report |
| 1. Demonstrate workplace ethics | * Meaning of ethics * Ethical perspectives * Principles of ethics * Values and beliefs * Ethical standards * Organization code of ethics * Common ethical dilemmas * Organization culture * Corruption, bribery and conflict of interest * Privacy and data protection * Diversity, harassment and mutual respect * Financial responsibility/accountability * Etiquette * Personal and professional integrity * Commitment to jurisdictional laws * Emerging issues in ethics | * Written tests * Oral questioning * Portfolio of evidence * Third party report |

**Suggested Methods of Instruction**

* Simulation/Role play
* Group Discussion
* Presentations
* Q&A
* Case studies
* Assignments

**Recommended Resources**

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

# ENVIRONMENTAL LITERACY

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Environmental Literacy

**Duration of Unit:** 20hours

**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.

**Summary of Learning Outcomes**

1. Control environmental hazard
2. Control environmental pollution
3. Demonstrate sustainable use of resources
4. Evaluate current practices in relation to resource usage

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Control environmental hazard | * Purposes and content of Environmental Management and Coordination Act 1999 * Purposes and content of Solid Waste Act * Storage methods for environmentally hazardous materials * Disposal methods of hazardous wastes * Types and uses of PPE in line with environmental regulations * Occupational Safety and Health Standards (OSHS) | * Written tests * Oral questions * Observation of work procedures |
| 1. Control environmental Pollution | * Types of pollution * Environmental pollution control measures * Types of solid wastes * Procedures for solid waste management * Different types of noise pollution * Methods for minimizing noise pollution | * Written tests * Oral questions * Observation of work procedures * Role play |
| 1. Demonstrate sustainable resource use | * Types of resources * Techniques in measuring current usage of resources * Calculating current usage of resources * Methods for minimizing wastage * Waste management procedures * Principles of 3Rs (Reduce, Reuse, Recycle) * Methods for economizing or reducing resource consumption | * Written tests * Oral questions * Observation of work procedures |
| 1. Evaluate current practices in relation to resource usage | * Collection of information on environmental and resource efficiency systems and procedures, * Measurement and recording of current resource usage * Analysis and recording of current purchasing strategies. * Analysis of current work processes to access information and data * Identification of areas for improvement | * Written tests * Oral questions * Observation of work procedures |
| 1. Identify Environmental legislations/conventions for environmental concerns | * Environmental issues/concerns * Environmental legislations /conventions and local ordinances * Industrial standard /environmental practices * International Environmental Protocols (Montreal, Kyoto) * Features of an environmental strategy | * Written tests * Oral questions * Observation of work procedures |

**Suggested Methods of Instruction**

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

**Recommended Resources**

* Computers
* Stationery
* Charts
* Video clips
* Audio tapes
* Radio sets
* TV sets
* LCD projectors
* Standard operating and/or other workplace procedures manuals
* Specific job procedures manuals
* Machine/equipment manufacturer’s specifications and instructions
* Personal Protective Equipment (PPE)

# OCCUPATIONAL SAFETY AND HEALTH PRACTICES

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

**Relationship to Occupational Standards**

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

**Duration of Unit:** 20 hours

**Unit Description**

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

**Summary of Learning Outcomes**

1. Adhere to workplace procedures for hazards and risk prevention
2. Participate in arrangements for workplace safety and health maintenance

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment**  **Methods** |
| 1. Adhere to workplace procedures for hazards and risk prevention | * Arrangement of work area and items in accordance with Company housekeeping procedures * Adherence to work standards and procedures * Application of preventive and control measures, including use of safety gears/PPE * Study and apply standards and procedures for incidents and emergencies. | * Oral questions * Written tests * Portfolio of evidence * Third party report |
| 1. Participate in arrangements for workplace safety and health maintenance | * Participating in orientations on OSH requirements/regulations of tasks * Providing feedback on health, safety, and security concerns to appropriate personnel as required in a sufficiently detailed manner * Practice workplace procedures for reporting hazards, incidents, injuries and sickness * OSH requirements/ regulations and workplace safety and hazard control procedures are reviewed, and compliance reported to appropriate personnel * Identification of needed OSH-related trainings are proposed to appropriate personnel | * Oral questions * Written tests * Portfolio of evidence * Third party report |

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# CORE UNITS OF LEARNING

# HANDLING OF EGGS FOR HATCHING

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Handle Eggs for Hatching

**Duration of Unit:** 112 hours

**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.

**Summary of Learning Outcomes**

1. Grade eggs for hatching
2. Store fumigated eggs
3. Enter hatchery records

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Grade eggs for hatching | * Occupational safety and health procedures * Hatching eggs handling * Egg reception * Traying * Loading * Grading of hatching eggs * Standard conditions of hatching eggs * Inspection * Sorting | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Store fumigated eggs | * Hatchery pest and predator control * Egg fumigation * Egg storage * Storage materials * Storage conditions * Storage duration * Waste management | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Enter hatchery records | * Egg parameters recordings * Egg numbers (received, sorted, rejected and stored) * Egg weight / size / shape * Type of eggs (Breed / species) | * Written tests * Observation * Oral questions * Third party report * Interviewing |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction
* Electronic audio-visual presentations
* Simulations

**Recommended Resources**

|  |  |  |
| --- | --- | --- |
| Functional hatchery farm with the following: | | |
| * Hatchery unit * Biosecurity structures and materials (gate barriers, foot baths, spray races / showers, disinfectants, sanitizers, detergents, fumigants, water and vaccination kits) | * Labels or labelling materials for egg trays, trolleys, chick baskets and packaging material * Stationery * Calculators and / or computers | * Hatchery pest and predator control equipment and materials * Hatchery operations manuals * Livestock production manuals * Journal of poultry science |

# HATCHING POULTRY EGGS

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Hatch Poultry Eggs

**Duration of Unit:** 96 hours

**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.

**Summary of Learning Outcomes**

1. Set poultry eggs
2. Monitor egg hatching
3. Transfer hatched chicks
4. Enter hatchery records

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

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| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Set poultry eggs | * PPE * Hatchery Biosecurity measures * Egg structure * Egg retrieval from cold storage * Egg traying room * Setting trays * Setting troleys * Egg setting * Setting position (vertical with broad ends up) * Incubation chamber parameters (temperature and humidity) * Turning mechanisms, angles and frequency * Duration of setting * Power outage and back up options | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Monitor egg hatching | * Egg incubation periods of poultry * Hatching dates * Removal from hatching trays * Egg candling * Infertile eggs * Dead in shell embryos * Exploders * Transfer to hatching baskets * Hatching position (horizontal) * Hatching machines * Transfer to hatching machine * Chick hatching process * Hatching parameters (temperature, humidity and CO2 concentrations) * Pipping / shell cracking * Hatch window (duration) * Hatching indicators (amount of fluff, chick noises) | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Transfer hatched chicks | * Chick transfer * Basket pulling * Chick separation from debris * Chick sorting – sorting criteria * Unhatched eggs * Stages of embryonic deaths (dead in shell, pipped) * Causes of embryonic deaths * Remedial measures to minimise the embryonic deaths * Disposal of hatchery wastes | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Enter hatchery records | * Incubation parameter recordings * Power outages * Egg parameters (numbers incubated, candled, rejected, hatched, type of eggs, breed) * Batch numbers, flock, dates of incubation, candling hatching and transfer) | * Written tests * Observation * Oral questions * Third party report * Interviewing |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction
* Electronic audio-visual presentations
* Simulations

**Recommended Resources**

|  |  |  |
| --- | --- | --- |
| Functional hatchery farm with the following: | | |
| * Hatchery unit * Biosecurity structures and materials (gate barriers, foot baths, spray races / showers, disinfectants, sanitizers, detergents, fumigants, water and vaccination kits) * Labels or labelling materials for egg trays, trolleys, chick baskets and packaging material * Stationery * Calculators and / or computers | * Hatchery equipment and tools (fumigators, sprayers, refrigirators, hatching machines, setters / incubators, candling machines, egg crates and trays, egg trolleys, hatching baskets, chick boxes, chick labels, identification kits, macerators and renderers, gas cylinders, vacuum cleaners) | * Hatchery pest and predator control equipment and materials * Hatchery operations manuals * Livestock production manuals * Journal of poultry science * Chick feed * Feed stores |

# HANDLING HATCHED CHICKS

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Handle Hatched Chicks

**Duration of Unit:** 112 hours

**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.

**Summary of Learning Outcomes**

1. Perform chick sexing
2. Trim chick beaks
3. Monitor chick health
4. Package poultry chicks
5. Manage unwanted chicks
6. Mange hatchery biosecurity measures
7. Maintain hatchery records

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Perform chick sexing | * Sexing of poultry * Vent sexing * Initial relative feather length * Plumage colour sexing * Combs and wattles sexing * Factors considered in separation of poultry into different sexes | * Written tests * Observation * Oral questions * Third party report * Interviewing |
|  | * Beak trimming equipment * Beak trimming procedure | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Monitor chick health | * Factors considered when developing chick vaccination schedule * Disease prevalence * Duration of immunity (lifetime or partial) * Disease severity * Economic importance * Types of vaccines (live attenuated, inactivated, vectored/recombinant) * Vaccine handling * Refrigeration methods * Record keeping * Vaccination sites and routes * Vaccine intake * Animal welfare regulations * Chick handling * Recording vaccination details * 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 chick vaccine administration (IM, sub-cutaneous, intra nasal, intra ocular or spray, follicular swabbing, drinking water application, scarification) * Number of birds vaccinated * Identification of birds (flock, type, breed) | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Package poultry chicks | * Chick packaging materials * Types (cartons, carton liners etc) * Labelling * Loading capacities * Chick transportation * Transportation conditions (Temperature, humidity, air speed) * Transportation duration * Poultry welfare * Dispatch methods and procedures * Order processing * Distribution channels | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Manage unwanted chicks | * Categories of unwanted chicks * Types (culled, unhealthy, deformed and males in commercial layers) * Chick sorting * Modes of disposal | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Maintain hatchery biosecurity measures | * + Biosecurity in a poultry hatchery firm   + Measures   + Standard operational procedures (SOPs)   + Regulatory bodies   + Designing biosecurity structures and equipment installation   + Written standard biosecurity operational procedures in poultry hatchery farms   + Occupational safety and health procedures in poultry hatchery firm   + Hatchery firm waste management   + Eggs unsuitable for hatching   + Hatchery debris (fluff, egg shells, unhatched eggs)   + Dead chicks   + Litter (droppings, feathers, spilt feed)   + Other wastes (plastics, glass, paper, metals and fluids)   + Environment protection regulations * Hatchery operations licensing | * Written tests * Observation * Oral questions * Third party report * Interviewing |
| 1. Maintain hatchery records | * Poultry hatchery chick records   + Number of chicks hatched, vaccinated, sexed (males and females), dead, deformed, weaklings,   + Health records – vaccination   + Dispatch records – orders, dates, numbers (chicks)   + Data entry, analysis and interpretation   + Frequency of recording   + Record maintenance (updating and storage) | * Written tests * Observation * Oral questions * Third party report * Interviewing |

**Suggested Methods of Instruction**

* Project
* Demonstration by trainer
* Practice by the trainee
* Field trips
* Discussions
* Direct instruction
* Electronic audio-visual presentations
* Simulations

**Recommended Resources**

|  |  |  |
| --- | --- | --- |
| Functional hatchery farm with the following: | | |
| * Hatchery unit * Biosecurity structures and materials (gate barriers, foot baths, spray races / showers, disinfectants, sanitizers, detergents, fumigants, water and vaccination kits) * Labels or labelling materials for egg trays, trolleys, chick baskets and packaging material * Stationery * Calculators and / or computers | * Hatchery equipment and tools (fumigators, foggers/sprayers, refrigirators, hatching machines, setters / incubators, candling machines, egg crates and trays, egg trolleys, hatching baskets, chick boxes, chick labels, identification kits, macerators and renderers, gas cylinders, vacuum cleaners) | * Hatchery pest and predator control equipment and materials * Hatchery operations manuals * Livestock production manuals * Journal of poultry science * Chick feed * Feed stores |