

**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**FOOD PROCESSING TECHNICIAN**

**LEVEL 4**



TVET CDACC

P.O. BOX 15745-00100

NAIROBI

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# FOREWORD

The provision of quality education and training is fundamental to the Government’s overall strategy for social economic development. Quality education and training will contribute to achievement of Kenya’s development blueprint, Vision 2030 and sustainable development goals.

Reforms in the education sector are necessary for the achievement of Kenya Vision 2030 and meeting the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution of Kenya 2010 and this resulted in the formulation of the Policy Framework for Reforming Education and Training (Sessional Paper No. 4 of 2016). A key feature of this policy is the radical change in the design and delivery of the TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that these Occupational Standards were developed for the purpose of developing a competency-based curriculum for Food Processing Technology Level 4. These Occupational Standards will also be the basis for assessment of an individual for competence certification.

It is my conviction that these Occupational Standards will play a greater role towards development of competent human resource for the Food processing sector’s growth and development.

**PRINCIPAL SECRETARY, VOCATIONAL AND TECHNICAL TRAINING**

**MINISTRY OF EDUCATION**

# PREFACE

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

The Technical and Vocational Education and Training Act No. 29 of 2013 and Sessional Paper No. 4 of 2016 on Reforming Education and Training in Kenya, emphasized the need to reform curriculum development, assessment and certification. This called for a shift to CBET in order to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

The TVET Curriculum Development, Assessment and Certification Council (TVET CDACC), in conjunction with Food Technology Sector Skills Advisory Committee (SSAC have developed these Occupational Standards for Food Technician. These standards will be the basis for development of competency-based curriculum for Food Technology Level 4.

The occupational standards are designed and organized with clear performance criteria for each element of a unit of competency. These standards also outline the required knowledge and skills as well as evidence guide.

I am grateful to the Council Members, Council Secretariat, Food Technology SSAC, expert workers and all those who participated in the development of these Occupational Standards.

**CHAIRPERSON, TVET CDACC**

# ACKNOWLEDGMENT

These Occupational Standards were developed through combined effort of various stakeholders from private and public organizations. I am thankful to the management of these organizations for allowing their staff to participate in this course. I wish to acknowledge the invaluable contribution of industry players who provided inputs towards the development of these Standards.

I thank TVET Curriculum Development, Assessment and Certification Council (TVET CDACC) for providing guidance on the development of these Standards. My gratitude goes to Food Technology Sector Skills Advisory Committee (SSAC) members for their contribution to the development of these Standards. I thank all the individuals and organizations who participated in the validation of these Standards.

My gratitude also goes to the Ministry of Industrialization which enabled the development of these Standards through the industry experts.

I acknowledge all other institutions which in one way or another contributed to the development of these Standards.

**CHAIRPERSON**

**FOOD TECHNOLOGY SECTOR SKILLS ADVISORY COMMITTEE**

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# ACRONYMS AND ABBREVIATIONS

AOAC: Association of Official Analytical Chemists

BRC: British Retail Consortium

CDACC: Curriculum Development, Assessment and Certification Council

EMCA: Environmental Management Co-ordination Act

EMS: Environmental Management Systems

FSMS: Food Safety Management Systems

GLC: Gas Liquid Chromatograph

GLPs: Good Laboratory Practices

GMO: Genetically Modified Organisms

GMPs: Good Manufacturing Practices

HACCP: Hazard Analysis Critical Control Point

HPLC: High Performance Liquid Chromatograph

ICT: Information communication technology

NEMA: National Environment Management Authority

NP: New Product

OSH: Occupational Safety and Health

PRPs: Pre-Requisite Programs

QMS: Quality Management Systems

SOPs: Standard Operating Procedures

TVET: Technical and Vocational Education and Training

UV: Ultraviolet

# KEY TO UNIT CODE

**FOP/OS/FT/BC/01/4 A**

Industry or sector

Occupational Standards

Occupational area

Type of competency

Competency number

Competency level

Version control

# COURSE OVERVIEW

Food Processing Technician Certificate level 4 qualification consists of competencies that a person must acquire to enable him/her to perform food plant hygiene and sanitation, process food products, maintain quality of food materials, preserve food materials and dispatch processed food products.

The units of competency leading to Food Processing Technician level 4 qualification include the following seven basic and five core competencies:

**Basic Units of Competence**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| FOP/OS/FT/BC/01/4/A | Demonstrate communication Skills |
| FOP/OS/FT/BC/02/4/A | Demonstrate numeracy skills |
| FOP/OS/FT/BC/03/4/A | Demonstrate digital literacy |
| FOP/OS/FT/BC/04/4/A | Demonstrate entrepreneurial skills |
| FOP/OS/FT/BC/05/4/A | Demonstrate employability skills |
| FOP/OS/FT/BC/06/4/A | Demonstrate environmental literacy |
| FOP/OS/FT/BC/07/4/A | Demonstrate occupational safety and health practices |

**Core Units of Competence**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| FOP/OS/FT/CR/01/4/A | Perform food plant hygiene and sanitation |
| FOP/OS/FT/CR/02/4/A | Process food products |
| FOP/OS/FT/CR/03/4/A | Maintain food materials quality |
| FOP/OS/FT/CR/04/4/A | Preserve food materials |
| FOP/OS/FT/CR/05/4/A | Dispatch processed food products |

# BASIC UNITS OF COMPETENCY

# DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE:** FOP/OS/FT/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:** FOP/OS/FT/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:** FOP/OS/FT/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:** FOP/OS/FT/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:** FOP/OS/FT/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:** FOP/OS/FT/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 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 OCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE:** FOP/OS/FT/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 COMPETENCY

# PERFORM FOOD PLANT HYGIENE AND SANITATION

**UNIT CODE:** FOP/OS/FT/CR/01/4/A

**UNIT DESCRIPTION:**

This unit specifies the competencies required to perform food plant hygiene and sanitation. It involves preparing cleaning reagents and equipment, carrying out cleaning operations, maintaining food plant cleaning equipment and materials and

disposing of food plant wastes. It also includes maintaining hygiene and sanitation 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. Prepare cleaning reagents and equipment | * 1. ***Cleaning type*** is identified as per the nature of ***food soils and areas***   2. Cleaning equipment are identified according to the type and place of cleaning   3. ***Cleaning reagents and equipment*** are obtained according to factory guidelines   4. Cleaning equipment are assessed for efficiency as per workplace and equipment manual   5. Cleaning reagents are standardized according to requirements and guidelines |
| 1. Carry out cleaning operations | * 1. Food plant areas for cleaning are identified according to workplace guidelines   2. ***PPEs*** are identified and used as per OSHA requirements and workplace guidelines   3. ***Food plant cleaning operations*** are conducted according to SOPs and workplace instructions   4. Plant equipment are dismantled as per manufactures manual guidelines   5. Swabs and rinse water samples are collected for analysis as per workplace procedures and quality standards   6. Plant equipment are assembled according to specific manual guidelines |
| 1. Maintain food plant cleaning equipment and materials | * 1. Cleaning equipment are cleaned, dried and stored as per specific guidelines   2. Cleaning equipment are ***serviced*** as per equipment manual   3. Reagents are stored according to safety standards/regulations and workplace instructions |
| 1. Dispose food plant wastes | * 1. ***Food plant wastes*** are collected and sorted as per factory guidelines   2. Recyclable wastes are weighed and stored based on workplace requirements   3. Plant solid wastes are disposed of according to environmental guidelines and workplace instructions   4. Effluent is treated and discharged as per workplace instructions   5. Waste collection equipment are cleaned and sanitized as per workplace guidelines |
| 1. Maintain hygiene and sanitation records | * 1. Factory and food hygiene records are maintained according to quality standards   2. Environmental hygiene records are maintained as per NEMA regulations   3. Personal hygiene records are maintained as per health regulations   4. Cleaning equipment, reagent and cleaning interval records are maintained as per workplace policy   5. Equipment servicing records are maintained as per workplace requirement |

**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. Cleaning type may include but not are limited: | * Cleaning-In-Place (CIP) * Cleaning Out of Place (COP) |
| 1. Food soils and areasmay include but not are limited: | * Food soil   + Proteins   + Lipids   + Burn-ons   + Scum * Areas   + Ceiling   + Floors   + Walls   + Inside pipes   + On equipment   + Working benches and surfaces |
| 1. Cleaning reagents and equipment may include but not are limited: | * Cleaning reagents   + Detergents   + Sanitizers   + Sterilizers   + Disinfectants * Cleaning equipment   + Vacuum cleaners   + Autoclaves   + PPEs   + Ovens   + Blowers   + Spray jet cleaners/pressure cleaner   + Squeegee   + Steam injectors |
| 1. PPEs may include but not are limited: | * Goggles * Gumboots * Hand gloves * Overalls * Head nets/gears * Dust masks * Respiratory masks * Canvas apron |
| 1. Food plant cleaning operationsmay include but not are limited: | * Primary cleaning   + Sweeping   + Soaking   + Dusting   + Blowing * Secondary cleaning   + Scrubbing   + Use of steam   + Descaling   + Neutralization * Rinsing * Disinfection * Inspection   + Swabs   + Rinse water |
| 1. Service may include but not are limited: | * Oiling/greasing movable parts * Tightening of loose bolts and nuts * Replacement of worn-out parts and handles * Sealing leakages |
| 1. Plant wastes may include but not are limited: | * Bones, hides, hooves * Peels, stalks, wild seeds * Food residues * Spent yeasts * Rejected crumbs, burn-ons * Effluents * Torn packages |

**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
* Team work
* Planning
* Problem solving
* Route cause analysis
* Negotiation
* Interpretation
* Apparatus and equipment handling
* Sampling techniques
* Computer skills

**Required Knowledge**

The individual needs to demonstrate knowledge of;

* Basic Food chemistry
* Basic Food microbiology
* Basic food Quality/Safety management
* PRPs e.g., Pest and rodent control, sanitation, GMPs
* Emerging Issues
* Basic Principles of food engineering
* Environmental safety
* Basic Laboratory techniques
* Computer packages

**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 demonstrated:   * 1. Knowledge of plant, food, environmental and personal hygiene   2. Knowledge on quality standards, plant equipment and cleaning reagents and equipment   3. Ability to clean various food soils, dirt and surfaces   4. Ability to perform different types of cleaning   5. Ability to use PPES, cleaning equipment and reagents   6. Adhere to OSH code of practice.   7. Recorded and maintained hygiene and sanitation activities correctly. |
| 1. Resource Implications | The following resources **MUST** be provided:   1. Food processing laboratory 2. Functional food factory. |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Oral questioning   3. Projects   4. Written tests   5. Third party   6. Portfolio of evidence |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (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 role is recommended. |

# PROCESS FOOD PRODUCTS

**UNIT CODE:** FOP/OS/FT/CR/02/4**/**A

**UNIT DESCRIPTION**

This unit specifies the competencies required to process food products. It involves Obtain processing raw materials, sampling raw material, sorting processing raw materials, preparing processing raw material, feeding processing raw material, sampling in-line food material, monitoring processing lines parameters, packaging food products and dispatch, shutting down the production equipment, storing processed food products and maintaining food-processing 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. Obtain processing raw materials | 1. Raw materials are requested as per workplace procedures 2. Raw materials are received according to workplace procedure 3. Raw materials are weighed and recorded as per workplace instructions 4. Food processing records are retrieved as per workplace guidelines. |
| 1. Sample raw materials | 1. Sampling equipment are obtained as per workplace instructions 2. Sample collection information is recorded as per workplace instructions 3. Samples are collected and handed over as per workplace procedure |
| 1. Sort processing raw materials | 1. ***Sorting equipment*** and personnel are sourced as per workplace procedures 2. Raw materials are sorted and recorded as per ***standard requirements*** |
| 1. Prepare processing raw materials | 1. Sorted material are weighed as per workplace instructions 2. Raw materials are recorded as per workplace instructions |
| 1. Feed processing line | 1. Food raw materials are handled as per food specification and workplace procedures 2. Feed is introduced into the processing line as per workplace procedure |
| 1. Sample in-line food materials | 1. Sampling equipment and tools are prepared as per the product specifications 2. Food material samples are collected as per the SOPs 3. Food samples are recorded as per workplace guidelines |
| 1. Monitor processing lines parameters | 1. ***Processing parameters*** are checked as per workplace instructions 2. ***Process-line product standards*** are monitored as per workplace instructions 3. Process-line product samples are collected as per workplace procedure and instructions 4. Production equipment efficiency is monitored in accordance with its specifications 5. ***GMPs*** are adhered to as per workplace instructions 6. ***Food product is packaged*** as per product specifications 7. Processed products are prepared for dispatch as per workplace instructions |
| 1. Package food products and dispatch | * 1. Food packaging material are assembled and prepared as per workplace procedure   2. Food packaging is monitored as per the SOPs   3. Packaged food is dispatched as per the workplace procedure |
| 1. Shut down the production equipment | * 1. Shut-down procedures are followed as per workplace instructions   2. Production line is cleaned and sanitized as per workplace quality standards   3. Food processing equipment are prepared for maintenance as per maintenance guidelines and workplace instructions |
| 1. Store processed food products | * 1. Food product storage conditions are identified according to product specifications and workplace procedures   2. ***Food product store is prepared*** as per product specifications and workplace procedures   3. Processed food products are stored in accordance with product standard requirements and workplace procedures |
| 1. Maintain food processing records | * 1. Production records are prepared and maintained as per workplace policy.   2. Food processing activities are recorded as per workplace instructions and operations manual.   3. Sanitation and dispatch records are prepared as per workplace instructions |

**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. Sorting equipment may include but not are limited: | * Metal detectors * Sieves/Screens * Blowers/ Aspirators * Shakers/Vibrators * Optical / Colour sorter |
| 1. Standard requirements may include but not are limited: | * Colour * Size * Shape |
| 1. Raw materials preparation may include but not are limited: | * Cleaning * Peeling * Comminution * Deboning * Depodding * Trimming * Destalking * Pulping * Destoning * Decoring * Pitting |
| 1. Processing line may include but not are limited: | * Conveyor belts * Jacketed Vats * Mills * Pulper * Shredder * Mincer * Mixer |
| 1. Processing parameters may include but not are limited: | * Temperature * Pressure * Humidity * Time * PH * Total dissolved solids |
| 1. Process-line product standards may include but not are limited: | * Physical   + Colour   + Viscosity   + Texture * Organoleptic   + Taste   + Odour/smell |
| 1. GMPs may include but not are limited: | * Sanitation * Maintenance * Personal Hygiene * Waste disposal |
| 1. Packaging materials and equipment may include but not are limited: | * Packaging materials   + Cans   + Plastic bottles   + Glass   + Pouches   + Foils   + Cartons   + Tetra-packs * Packaging equipment   + Can sealer/seamers   + Thermo-sealer   + Can/bottle feeders   + Shrink wrap   + Bar code machines |
| 1. Food product packaged may include but not are limited: | * Seaming * Crating * Bottling * Wrapping |
| 1. Shut-down procedures may include but not are limited: | * Equipment shut-down procedure * Emergency shut-down procedure * Utilities shut-down procedure * Cleaning procedures after shut-down |
| 1. Food product store prepared may include but not are limited: | * Cleaning * Sanitizing * Setting storage parameters |
| 1. Processing line may include but not are limited: | * Raw material reception area * Processing area * Packaging area * Dispatch area |

**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
* Teamwork
* Planning
* Problem solving
* Route cause analysis
* Negotiation
* Interpretation
* Apparatus handling
* Sampling
* Computer

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Basic Food chemistry
* Basic Food Analysis
* Basic Food microbiology
* Basic Quality management
* PRPs e.g., sanitation, GMPs
* Emerging Issues
* Basic Principles of food engineering
* Environmental safety
* Basic Laboratory techniques

**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  demonstrated:   * 1. Sorted various food raw materials   2. Sampled food raw and process line food materials   3. Operated food production equipment   4. Monitored processing line parameters   5. Ability to shut down production equipment   6. Stored processed food products   7. Maintained food production records   8. Basic understanding of quality standards   9. Basic understanding of product standards   10. Understanding of processing parameters   11. Ability to apply GMPs appropriately   12. Understanding of the technology of various food products/unit operations   13. Understanding of various relevant standard operating procedures |
| 1. Resource Implications | The following resources **MUST** be provided:   1. Food laboratory 2. Functional food factory 3. Stationeries 4. Computer 5. Printer |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Oral questioning   3. Projects   4. Written tests   5. Third party   6. Portfolio of evidence |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (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 role is recommended. |

# MAINTAIN QUALITY OF FOOD MATERIALS

**UNIT CODE:** FOP/OS/FT/CR/03/4/A

**UNIT DESCRIPTION**

This unit describes the competencies required to maintain quality of food materials. It involves inspecting food raw materials, inspecting in-line food materials, assessing finished products, assessing quality of packaged materials, maintaining food plant sanitization, performing plant perquisite programs (PRPs), reporting defective food materials and maintaining food quality 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. Inspect food raw materials | * 1. ***Food raw materials*** for inspection are identified according to workplace requirements   2. Sampling equipment are identified and acquired as per workplace instructions   3. PPEs are identified and used based on OSHA standard requirements   4. Inspection manuals and procedures are obtained as per workplace requirements   5. Food materials are inspected according to workplace procedures and standard requirements   6. Inspection results are recorded and shared as per workplace instructions |
| 1. Inspect in-line food materials | * 1. In-line food materials are identified as per workplace guidelines   2. In-line food samples are taken as per SOPs   3. In-line food samples are tested for quality as per SOPs   4. In-line food sample results are recorded as per workplace instructions. |
| 1. Assess finished products | * 1. Finished food products are identified as per workplace guidelines   2. Finished food products are sampled as per SOPs   3. Finished food products sample results are recorded as per the workplace instruction. |
| 1. Assess quality of packaging materials | * 1. Packaging materials for use are obtained according to food product specifications   2. ***Quality parameters*** are identified according to quality guidelines and workplace instructions   3. Conformity of packaging material parameters is analysed according to standard procedures |
| 1. Maintain food plant sanitation | * 1. ***Food plant sanitation requirements*** are identified based on quality requirements   2. Efficiency of plant sanitation requirements is checked according to workplace instructions   3. Required food plant sanitation procedures are carried out as per quality requirements |
| 1. Perform plant PRPs | * 1. ***PRPs*** are identified as per food safety and quality requirements   2. Specific PRPs are carried out as per workplace procedures |
| 1. Report defective food materials | * 1. Defective food materials are identified as per the workplace guidelines   2. Defective food materials are isolated as per the workplace procedures   3. Defective food materials are recorded as per workplace procedures |
| 1. Maintain food quality records | * 1. Records on quality of packaging materials are maintained as per workplace instructions   2. Maintenance of food plant sanitation records is carried out as per workplace instructions   3. Maintenance of PRP records are carried as per workplace instructions   4. Defective food materials records are kept as per workplace instructions |

**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. Food materials may include but not are limited: | * Raw food materials * In-line materials * Processed food products |
| 1. Quality parameters may include but not are limited: | * Size * Texture * Shape * Leakages * Labelling/Print outs * Color |
| 1. Food plant sanitation requirements may include but not are limited: | * Personal hygiene * Environmental hygiene * Equipment hygiene * Food hygiene * Packaging materials |
| 1. PRPsmay include but not are limited: | * GMPs   + Personal hygiene   + Sanitation   + Storage and warehousing   + Waste disposal   + Utilities   + Water   + Electricity   + Sanitation and maintenance * Pest and rodent control |

**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
* Cleaning
* Monitoring
* Leadership
* Organizing
* Problem solving
* Route cause analysis
* Negotiation
* Trouble shooting
* Analytical
* Training
* Coordination
* Report writing
* Computer

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Basic Food microbiology
* Basic Food plant hygiene and sanitation
* Food plant waste disposal
* PPEs usage
* Food plant cleaning detergents and sanitizers
* Food plant sanitation
* Food statutory legislation and regulations
* Emerging Issues
* Computer packages

**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 demonstrated:   1. Ability to Inspect food materials and report 2. Ability to assess quality of packaging materials 3. Ability to perform plant PRPs 4. Ability to maintain food quality records 5. Ability to prepare food plant cleaning and sanitation 6. Ability to perform food plant cleaning operations appropriately 7. Ability to dispose food plant wastes accordingly 8. Understanding of food plant sanitation and hygiene practices 9. Understanding of legal and statutory requirements 10. Understanding of emerging issues |
| 1. Resource Implications | The following resources must be provided:   * 1. Workplace or assessment location   2. Quality manuals   3. Computer   4. Stationery |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Oral   3. Projects   4. Written   5. Performance analysis |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (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 role is recommended. |

# PRESERVE FOOD MATERIALS

**UNIT CODE:** FOP/OS/FT/CR/04/4/A

**UNIT DESCRIPTION**

This unit describes the competencies required to preserve food materials. It involves preparing for food preservation, preparing food materials for storage and preserving food materials, performing stock control, carrying out pest and rodent control and maintaining food preservation 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. Prepare for food preservation | * 1. Food materials for preservation is identified as per workplace instructions   2. Required ***food preservation conditions*** are identified according to workplace requirements   3. Food storage equipment and materials are identified and obtained as per food storage requirements   4. ***PPEs*** are identified and worn based on OSHA standard requirements   5. Food store/equipment are cleaned and sanitized as per workplace instructions   6. Food preservation conditions are set as per standard requirements   7. Storage parameters are confirmed and maintained based on storage requirements |
| 1. Prepare food materials for storage | 1. Personal hygiene and sanitation requirements are adhered to according to workplace guidelines 2. PPEs are worn as per workplace safety and OSHA requirements 3. Food materials for storage are obtained according to workplace instructions 4. Food materials are packed for storage as per food product specifications |
| 1. Preserve food materials | * 1. Storage conditions are confirmed according to product storage requirements   2. Food materials are arranged in the food store as per workplace instructions   3. Store condition are set as per quality requirements   4. Food storage conditions are checked and maintained as per quality requirement and workplace instructions |
| 1. Perform stock control | * 1. Food stock is identified according to batch numbers   2. Stock is rotated as per workplace instructions   3. Stock is assessed for defects and reported as per quality requirement and workplace instructions   4. Stock is dispatched as per workplace instructions   5. Stock records are maintained as per workplace guidelines |
| 1. Carry out pest and rodent control | 1. Pest and rodents are identified and classified as per workplace instructions 2. ***Pest and rodents control measures*** are identified and executed according to workplace procedures 3. Pests and rodent control reports are maintained as per workplace instructions 4. Pests and rodent control reports are shared as per workplace guidelines |
| 1. Maintain food preservation records | 1. Records on quality of packaging materials are maintained as per workplace instructions 2. Sock control records are maintained as per workplace instructions 3. Maintenance of PRP records is carried as per workplace instructions 4. Defective food materials records are kept as per workplace instructions |

**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 |
| Food preservation conditions may include but not are limited: | * Cold storage * Room temperature storage * Irradiation * Controlled atmospheres * Modified atmosphere storage/Gaseous requirements * No light * Dry storage conditions |
| PPEs may include but not are limited: | * Dust masks * Hand gloves * Respiratory masks * Goggles * Head gears * Footwear * Apron/water proof canvas |
| Pest and rodents control measures may include but not are limited: | * Baiting * Fumigation * Trapping * Use of pesticides * Sanitation * Proofing * Predation |

**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
* Sanitization
* Monitoring
* Leadership
* Organizational
* Problem solving
* Route cause analysis
* Negotiation
* Trouble shooting
* Basic analytical
* Training
* Coordination
* Report writing
* Computer

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Principles of food preservation
* Pest and rodent control
* Basic Food microbiology
* Basic technology of specific food products
* Basic Food plant hygiene and sanitation
* Food plant waste disposal
* PPEs usage
* Food plant cleaning detergents and sanitizers
* Food statutory legislation and regulations
* Emerging 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 | 1. Identified food preservation conditions for different food materials 2. Used PPEs correctly and appropriately 3. Prepared for food preservation 4. Observed personal, environmental and food hygiene 5. Prepared food materials for storage 6. Preserved food materials 7. Performed stock control 8. Carried out pest and rodent control 9. Maintained food preservation records |
| 1. Resource Implications | The following resources must be provided:   * 1. Workplace or assessment location   2. Food preservation manuals   3. PPEs   4. Pest and rodent control equipment and materials   5. Computer   6. Stationery   7. Camera |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Oral   3. Projects   4. Written   5. Third party reports |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (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 role is recommended. |

# DISPATCH PROCESSED FOOD PRODUCTS

**UNIT CODE:** FOP/OS/FT/CR/05/4/A

**UNIT DESCRIPTION**

This unit describes the competencies required to dispatch processed food products. It involves preparing products for dispatch, obtaining dispatch documents, loading food products for dispatch, offloading food returns and maintaining dispatch 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. Prepare products for dispatch | 1. ***Food product dispatch documents*** are obtained as per workplace instructions 2. ***Products for dispatch*** are identified and checked according to workplace procedures 3. PPEs are identified and used as per workplace instructions and OSHA requirements 4. Required ***dispatch equipment and materials*** are identified, obtained and assessed for efficiency based on workplace requirements 5. Products for dispatch are isolated according to workplace instructions |
| 1. Load food products for dispatch | 1. Prepared dispatch products are verified according to dispatch documents and workplace instructions 2. Prepared dispatch ***products are loaded and arranged*** in accordance with product requirements 3. Food products loaded are verified and recorded as per dispatch note and workplace instructions 4. Dispatched food products documents are shared, and copies accompanies dispatched food products based on dispatch requirements and workplace instructions |
| 1. Offload food returns | 1. Return food product documents are obtained according to workplace procedures 2. Returned ***products are assessed and verified*** as per return documents 3. Returned food products are sorted and graded based on quality and workplace guidelines 4. Returned food materials are dispatched for storage, reworking, downgrading and disposal according to workplace instructions |
| 1. Maintain dispatch records | 1. Food products dispatched are recorded according to workplace requirements 2. Return inwards are recorded as per workplace instructions 3. Records of returned food materials dispatched for storage, reworking, downgrading and disposal are maintained according to workplace instructions |

**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 |
| Food product dispatch documents may include but not are limited: | * Local Purchase Order (LPO) * Invoice * Delivery note * Dispatch note * Work ticket * Gate pass * Stock notes/records * Loading books |
| Products for dispatch may include but not are limited: | * Cereals and cereal products * Milk and milk products * Meat, poultry and fish products * Vegetables and fruit products * Condiments * Beverages * Sugar and confectionaries |
| Dispatch equipment and materials may include but not are limited: | * Trucks * Trolleys * Forklifts * Cranes and hoists * Pallets * Conveyors |
| Products are loaded and arrangedmay include but not are limited: | * Stacking * Crating * Hanging * Palleting * Refrigerated trucks/tanks |
| Products are assessed and verified may include but not are limited: | * Quantities * Quality of packaging materials   + Dirt   + Deformation   + Labelling   + Leakages * Quality of food product   + Color change   + Smell   + Deformation   + Viscosity   + Consistency * Spillages * Expiries |

**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
* Sanitization
* Monitoring
* Leadership
* Organizational
* Problem solving
* Route cause analysis
* Trouble shooting
* Basic analytical
* Store keeping
* Training
* Coordination
* Report writing
* Computer

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Dispatch documents
* Basic principles of food preservation
* Basic store keeping
* Record keeping
* Basic Food microbiology
* Basic technology of specific food products
* Basic Food plant hygiene and sanitation
* Food plant waste disposal
* PPEs usage
* Food statutory legislation and regulations
* Emerging 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 | 1. Prepared products for dispatch 2. Loaded food products for dispatch 3. Offloaded food returns 4. Maintained dispatch records 5. Used PPEs appropriately 6. Assessed and verified quality of dispatched and returned food materials 7. Demonstrated understanding of dispatch documents and procedures 8. Demonstrated understanding of food handling and plant sanitation |
| 1. Resource Implications | The following resources must be provided:   * 1. Workplace or assessment location   2. Dispatch documents   3. Dispatch equipment and materials   4. PPEs   5. Computer   6. Stationery   7. Camera |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Oral   3. Projects   4. Written   5. Third party reports |
| 1. Context of Assessment | Competency may be assessed:   1. On the job 2. Off the job 3. In work placement (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 role is recommended. |