

**THE REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**BAKING TECHNOLOGIST**

**(YEAST & PASTRY)**

**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 Kenya’s development blue print 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 and this resulted to the formulation of the Policy Framework for Reforming Education and Training. A key feature of this policy is the radical change in the design and delivery of the TVET training. The policy document requires that training in TVET shall be competency based, curriculum development shall be industry led, certification shall be based on demonstration of competence and mode of delivery shall allow for multiple entry and exit in TVET programmes.

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

It is my conviction that these Occupational Standards will play a great role towards development of competent human resource for the Food Processing sector’s growth and sustainable 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 on Reforming Education and Training in Kenya, emphasized the need toreform curriculum development, assessment and certification. This called for shift to CBET to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

The TVET Curriculum Development, Assessment and Certification Council (TVET CDACC), in conjunction with Cake Bakers and Decorators Sector Skills Advisory Committee (SSAC) have developed these Occupational Standards for a Baking Technologist. These occupational standards will be the basis for development of competency based curriculum for Baking Technology Level 4. These Standards will also be the basis for assessment of an individual for competence certification.

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 Council Secretariat, Council Technical Committee, Cake Bakers and Decorators SSAC and 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 sincerely 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 the Cake Bakers and Decorators 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 Nairobi College of Bread and Confectionery Technology who cooperated with TVET CDACC in the development of these Standards.

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

**CHAIRPERSON**

**CAKE BAKERS AND DECORATORS SECTOR SKILLS ADVISORY COMMITTEE**

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# ABBREVIATIONS AND ACRONYMS

BC Basic Competency

CDACC Curriculum Development, Assessment and Certification Council

CPU Central Processing Unit

CR Core Competency

FOP Food Processing Industry

BT Baking Technology

ICT Information Communication Technology

NEMA National Environmental Management Authority

OS Occupational Standards

OSHA Occupation Safety and Health Act

OSHS Occupation Safety and Health Standards

PPE Personal Protective Equipment

SOPs Standard Operating Procedures

SSAC Sector Skills Advisory Committee

TVET Technical and Vocational Education and Training

# KEY TO UNIT CODE

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

Industry or sector

Occupational Standards

Occupational area

Type of competency

Competency number

Competency level

Version Control

# OVERVIEW

Baking Technology Level 4 qualification consists of competencies that an individual must achieve to enable him/her to produce of a variety of: yeast products and pastry products.

The units of competency comprising Baking Technology Level 4 qualification include the following:

**BASIC UNITS OF COMPETENCY**

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

**COMMON UNITS OF COMPETENCY**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| FOP/OS/BT/CC/01/4/A | Demonstrate Understanding of Baking Raw Materials Science |
| FOP/OS/BT/CC/02/4/A | Demonstrate Understanding of Bakery Plant And Equipment |

**CORE UNITS OF COMPETENCY**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| FOP/OS/BT/CR/01/4/A | Produce Yeast Products |
| FOP/OS/BT/CR/02/4/A | Produce Pastry Products |

# BASIC UNITS OF COMPETENCY

# DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE:** FOP/OS/BT/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/BT/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/BT/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/BT/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/BT/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/BT/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. Identify environmental legislations/conventions for environmental concerns
 | 1. Environmental legislations/conventions and local ordinances are identified according to the different environmental aspects/impact
2. Industrial standard/environmental practices are described according to the different environmental concerns
 |

**RANGE**

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

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

**REQUIRED SKILLS AND KNOWLEDGE**

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

**Required Skills**

The individual needs to demonstrate the following skills:

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

**Required Knowledge**

The individual needs to demonstrate knowledge of:

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

**EVIDENCE GUIDE**

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

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

# DEMONSTRATE OCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE:** FOP/OS/BT/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. |

# COMMON UNITS OF COMPETENCY

# DEMONSTRATE UNDERSTANDING OF BAKING RAW MATERIALS

**UNIT CODE:** FOP/OS/BT/CC/01/4/A

**UNIT DESCRIPTION**

This unit covers the competencies required to demonstrate understanding of baking raw materials. It involves demonstrating knowledge of wheat flour, other flours used in baking, leavening agents, fats and oils, moistening agents, sweeteners, flavouring and colouring agents, additives, fruits and nuts and packaging materials used in baking.

This standard applies in Baking industry.

**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. Demonstrate knowledge of wheat flour as a bakery raw material
 | * 1. Wheat flour composition is described based on the wheat grain.
	2. Composition of the wheat flour is described based on the wheat grain.
	3. ***Types of flour*** are described based on extraction rate and ***wheat type.***
	4. Flour characteristic are described based on strength, nutrient content, water absorption power (WAP) and starch content.
	5. Wheat flour physical properties are described based on color and texture.
	6. Wheat flour storage is described based on store characteristics.
 |
| 1. Demonstrate knowledge of other flours used in baking
 | * 1. ***Other flours used in baking*** are identified based on purpose.
	2. Characteristics of other flours used in baking are described based on product characteristic.
	3. Uses and functions of other flours used in baking are described based on the wheat grain.
	4. Physical properties of other flours used in baking are described based on the wheat grain.
 |
| 1. Demonstrate knowledge of leavening agents as raw materials in baking
 | * 1. ***Leavening agents*** is described based on properties.
	2. Types of leavening agents are described based on their chemical and physical properties.
	3. Uses and functions of leavening agents are described based on type of product.
	4. Storage of leavening agents is described based on product characteristic and store characteristics.
 |
| 1. Demonstrate knowledge of fats and oils as raw materials in baking
 | * 1. ***Fats and oils used in baking*** are defined based on their properties.
	2. Sources of oils and fats are described based on raw materials and origin.
	3. Types of fats and oils are described based on raw materials and properties.
	4. Spoilage and preservation of fats and oils described based on shelf-life, packaging, store characteristics, properties.
	5. Uses of fats and oils are described based on type of products, production process and properties.
 |
| 1. Demonstrate knowledge of moistening agents as raw materials in baking
 | * 1. ***Moistening agents*** are described based on their physical properties.
	2. Characteristics of moistening agents are described based on physical properties.
	3. Uses of moistening agents in baking are described based on types of product and their physical properties.
	4. Storage of moistening agents is described based on their properties.
 |
| 1. Demonstrate knowledge of sweeteners as raw materials in baking
 | * 1. ***Sweetening agents*** are described based on their sources.
	2. Sweetening agents are described based on their physical properties.
	3. Functions of sweetening agents in bakery are described based on type of product.
	4. Storage of sweetening agents is described based on their properties.
 |
| 1. Demonstrate knowledge of flavouring and colouring agents as raw materials in baking
 | * 1. ***Flavouring and colouring agents*** are described based on their sources and properties.
	2. Uses of flavouring and colouring agents in baking are described based on their properties and type of product.
	3. Storage of flavouring and colouring agents is described based on their properties.
 |
| 1. Demonstrate knowledge of additives as raw materials in baking
 | * 1. ***Additives*** ***used in baking*** are described based on their sources and properties.
	2. Characteristics of additives are described based on physical properties.
	3. Uses of additives in baking are described based on their properties and type of product.
	4. Storage of additives is described based on their properties.
 |
| 1. Demonstrate knowledge of fruits and nuts as raw materials in baking
 | * 1. Fruits and nuts used in baking are described based on their type.
	2. Characteristics of fruits and nuts used in baking are described based on physical properties.
	3. Uses of fruits and nuts used in baking are described based on their properties and type of product.
	4. Storage of fruits and nuts used in baking are described based on their properties.
 |
| 1. Demonstrate knowledge of packaging materials used in baking
 | * 1. ***Packaging materials*** used in bakery industry are described based on properties and products.
	2. Legislation on packaging materials used in bakery are described based on products.
 |

**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.

|  |  |
| --- | --- |
| Variables | Range  |
| 1. Wheat type may include but not limited to:
 | * Hard wheat
* Soft wheat
 |
| 1. Types of flour may include but not limited to:
 | * Germ meal
* Semolina
* Straight run
* Wheat meal
* Whole meal
 |
| 1. Other flours used in baking may include but not limited to:
 | * Rye
* Oat
* Soya
* Rice
* Carrot
* Corn
* Cassava
* Millet
* Sorghum
* Potato
* Arrow roots
 |
| 1. Leavening agents may include but not limited to:
 | * Yeast
* Baking powder
* Bicarbonate of soda
 |
| 1. Fats and oils used in baking may include but not limited to:
 | * Vegetable oils-sunflower, corn oil, olive oil
* Vegetable fats-margarine
* Animal fats-butter, lard
 |
| 1. Moistening agents may include but not limited to:
 | * Water
* Milk
* Eggs
* Syrups
 |
| 1. Sweetening agents may include but not limited to:
 | * Cane sugars-caster sugar, icing sugar,
* Beet sugar
* Honey
* Syrups-glucose syrup
* Exclude banned/restricted sweeteners
 |
| 1. Flavoring and coloring agents may include but not limited to:
 | * Flavoring-strawberry, vanilla, lemon, mango, pineapple
* Coloring- Artificial (chemical)
* Natural (plant extracts) -cocoa powder
* Exclude banned/restricted flavors
 |
| 1. Additives used in baking may include but not limited to:
 | * Emulsifiers- glycerol mono stearate
* Improvers- ascorbic acid, L-cistein hydrochloride
* Preservatives -mold inhibitors, acetic acid, calcium propionate
* Exclude banned/restricted additives
 |
| 1. Packaging materials may include but not limited to:
 | * Waxed paper
* Aluminum foil
* Cling film
* Boxes
* Boards
* Paper bags
 |

**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
* Inter-personal
* Analytical
* Computer
* Problem solving
* Decision making
* Presentation
* Critical thinking
* Organizing
* Time management
* Report writing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Wheat flour
* Other flours used in baking
* Leavening agents
* Fats and oils
* Moistening agents
* Sweeteners
* Flavouring and colouring agents
* Additives
* Fruits and nuts
* Packaging materials used in baking

**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 knowledge of wheat flour as a bakery raw material
2. Demonstrated knowledge of other flours used in baking
3. Demonstrated knowledge f leavening agents as raw materials in baking
4. Demonstrated knowledge of fats and oils as raw materials in baking
5. Demonstrated knowledge of moistening agents as raw materials in baking
6. Demonstrated knowledge of sweeteners as raw materials in baking
7. Demonstrated knowledge of flavouring and colouring agents as raw materials in baking
8. Demonstrated knowledge of additives as raw materials in baking
9. Demonstrated knowledge of fruits and nuts as raw materials in baking
10. Demonstrated knowledge of packaging materials used in baking
 |
| 1. Resource implications
 | The following resources **must** be provided:1. A functional classroom with classroom resources
2. Stationery
3. Computers
 |
| 1. Methods of Assessment
 | Competency may be assessed through:1. Written tests
2. Assignments
3. Interview
 |
| 1. Context of Assessment
 | Assessment could be conducted: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 roles is recommended |

# DEMONSTRATE KNOWLEDGE OF BAKERY PLANT AND EQUIPMENT

**UNIT CODE:** FOP/OS/BT/CC/02/4/A

**UNIT DESCRIPTION**

This unit addresses the Unit of Competency: Demonstrate knowledge of bakery plant and equipment. It involves demonstrating knowledge of plant lay-out, equipment and machinery, hygiene, safety and security.

This standard applies in Baking industry.

**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. Demonstrate knowledge of bakery plant lay-out
 | 1. Bakery siting and location is described based on existing infrastructure, raw materials and market.
2. ***Sections in a bakery plant*** are described based on processing stages.
3. Bakery plant lay-out is illustrated based on processing stages.
4. Flow charts are drawn based on bakery processes.
 |
| 1. Demonstrate knowledge of bakery equipment and machinery
 | 1. The development of bakery equipment and machinery is described based on technological changes.
2. Bakery equipment and machinery are selected based on types of products and production capacity.
3. Use and care of bakery equipment and machinery is described based on manufacturers’ manual.
4. Purpose of bakery equipment and machinery maintenance is described based on type of maintenance.
 |
| 1. Demonstrate knowledge of bakery hygiene
 | 1. ***Bakery hygiene*** is described based on its importance.
2. Basic hygiene rules are outlined based on workplace policy.
3. ***Cleaning agents, materials and equipment*** are described based on their use.
4. Legislations on bakery hygiene are described based on legal requirements.
5. Schedules and techniques of cleaning are adhered to base on HACCP.
 |
| 1. Demonstrate knowledge of safety in the bakery
 | 1. Bakery safety requirements are described based on legal requirements.
2. ***Safety precautions*** in a bakery are described based on workplace policy.
3. First aid procedures are described based on emergency situations.
4. Fire safety procedures are described based on expected reaction.
5. Legislations on bakery safety are described based on legal requirements.
 |
| 1. Demonstrate knowledge of security in the bakery
 | 1. Bakery security is described based on its importance.
2. Bakery security is described in terms of availability ***security systems*** and personnel.
3. Legislations on bakery security are described based on legal 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.

|  |  |
| --- | --- |
| Variables  | Range  |
| 1. Sections in a bakery plant may include but not limited to:
 | * Store
* Mixing
* Scaling
* Moulding
* Proofing
* Baking
* Cooling
* Slicing/wrapping
* Packing
* Dispatch
 |
| 1. Bakery hygiene practices may include but not limited to:
 | * Hand washing
* Sanitation
* Cleaning
* Disinfection
* Medical tests
* Use of PPEs
 |
| 1. Cleaning agents may include but not limited to:
 | * Dis-infectants
* Soaps
* Detergents
* Alcohols
 |
| 1. Cleaning materials may include but not limited to:
 | * Dusters
* Brooms
* Mops
* Buckets
* Water
 |
| 1. Cleaning equipment may include but not limited to:
 | * Hoovers
* Vacuum cleaners
* Blowers
 |
| 1. Safety precautions may include but not limited to:
 | * Use of PPEs
* Guarding of moving parts of machines
* Non-slip floors
* Dry floors
* Food handlers’ certificates
* Lighting
* Installation of staircase hand rails
* Signage
* Breathalyzers
 |
| 1. Security systems may include but not limited to:
 | * CCTVs
* Security guarding
* Gates
* Fence
* Metal detectors
 |

**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
* Inter-personal
* Analytical
* Computer
* Problem solving
* Decision making
* Presentation
* Critical thinking
* Organizing
* Time management
* Report writing

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Bakery plant
* Plant lay-out
* Equipment and machinery
* Maintenance
* Hygiene
* Safety
* Security

**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 knowledge of bakery plant lay-out
2. Demonstrated knowledge of bakery equipment and machinery
3. Demonstrated knowledge of bakery hygiene
4. Demonstrated knowledge of safety in the bakery
5. Demonstrated knowledge of security in the bakery
 |
| 1. Resource implications
 | The following resources **must** be provided:1. A functional classroom and classroom resources
2. Stationery
3. Computers
 |
| 1. Methods of Assessment
 | Competency may be assessed through:1. Written tests
2. Assignments
3. Interview
 |
| 1. Context of Assessment
 | Assessment could be conducted: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 roles is recommended. |

# CORE UNITS OF COMPETENCY

# PRODUCE YEAST PRODUCTS

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

**UNIT DESCRIPTION**

This unit covers the competencies required to produce yeast products. It involves planning and preparing for production of yeast products, preparing yeast dough, processing dough for baking, preparing oven for baking yeast production, preparing yeast products for display and dispatch and preparing and baking selected yeast products.

This standard applies in Baking Industry.

**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*****(PASSIVE VOICE)** |
| 1. Plan and prepare for production of yeast products
 | * 1. ***Production ingredients*** are identified and requisitioned based on product type.
	2. Production ***tools and equipment*** are identified and assembled based on product type.
	3. Occupational safety and health requirements are observed as per legal requirements.
	4. ***PPEs*** are identified and used as per manufacturers’ instructions.
 |
| 1. Prepare yeast dough
 | * 1. Hygiene and sanitation requirements are adhered to as per workplace policy.
	2. Ingredients are weighed based on product type, quantity and method.
	3. Standard operating procedures for dough making are followed as per product type.
	4. Dough making tools and equipment are operated as per manufacturers’ manual.
	5. ***Yeast products*** quality is assured as per workplace policy.
 |
| 1. Process dough for baking
 | 3.1 Dough is fermented as per standard operating procedure and type of product. 3.2 Dough is scaled based on product type and legal requirements.3.3 Dough piece is moulded based on product type and required shape.3.4 Dough piece is panned based on standard operating procedure and product shape and type.3.5 Panned dough pieces are proofed as per standard operating procedure.  |
| 1. Prepare and bake selected yeast products
 | * 1. Oven is preheated based on type and size of yeast product.
	2. Oven is loaded as per standard operating procedure.
	3. Baking time is set as per product type.
	4. Baking is done as per type of oven and its standard operating procedure.
	5. Yeast product is removed from the oven and de-panned based on standard operating procedure.
 |
| 1. Prepare yeast product for display and packaging
 | * 1. Yeast product is cooled based on product type, size and standard operating procedure.
	2. ***Faulty products*** are identified and isolated based on yeast product quality standards.
	3. Yeast product is finished based on market demand.
	4. Yeast product is wrapped based on type and legal requirements.
	5. Yeast products are packaged based on type, workplace policy and legal requirements.
	6. Yeast products are displayed based on type, workplace policy and legal 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.

|  |  |
| --- | --- |
| Variables  | Range  |
| 1. Yeast products may include but not limited to:
 | * Bread
* white,
* sweet bread,
* honey bread,
* milk bread,
* whole meal bread,
* fruit,
* wheat meal bread,
* vitbe bread,
* turog bread
* Scones
* Buns
* Rolls
 |
| 1. Production ingredients may include but not limited to:
 | * Flour
* Fat
* Sugar
* Yeast
* Improvers
* Preservatives
* Flavors
* Colouring
* Assorted fruits
* Milk
 |
| 1. Tools and equipment may include but not limited to:
 | * Ovens
* Mixers
* Bowls
* Weighing scales
* Proofers
 |
| 1. PPEs may include but not limited to:
 | * Aprons,
* Hair nets,
* Safety boots,
* Face masks
* Dust coats
* Chef hats
* Hand gloves
* Oven gloves
 |
| 1. Products faults may include but not limited to:
 | * Small volume
* Over baking
* Flying tops
* Hollow crumb
* Low shelf life
* Hard crust
* Deformity
* Dull crust
 |

**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:

**Generic skills:**

* Communication
* Inter-personal
* Analytical
* Computer
* Problem solving
* Decision making
* Product presentation
* Critical thinking
* Organizing
* Time management
* Report writing

**Technical:**

* Weighing
* Dough mixing
* Dough scaling/dividing
* Dough molding
* Dough proofing
* Baking
* Oven handling
* Product quality analysis
* Storage

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Legal framework related to food production
* Yeast products raw materials
* Methods of dough making
* Dough processing
* Baking materials
* Recipe formulation: Types of yeast products
* Yeast products making tools and equipment
* Yeast products faults: causes and remedies
* Production process for yeast products
* Methods of making yeast products
* Yeast products knowledge
* Principles of costing
* Principles of sales and marketing
* Waste management
* Food hygiene and sanitation
* Ancillary stores routine
* Quality assurance
* Record keeping

**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, selected and gathered tools and equipment for production of yeast products correctly.
2. Identified and selected raw materials for production correctly.
3. Selected dough making methods appropriately.
4. Demonstrated ability to apply dough processing techniques.
5. Demonstrated ability to use baking tools and equipment correctly and appropriately.
6. Applied logical process, timing and synchronization of production.
7. Used personal protective equipment correctly and appropriately.
8. Demonstrated knowledge of occupational safety, health and hygiene requirements in a bakery.
9. Made yeast products using at least two methods.
10. Produced quality yeast products.
11. Packaged yeast products appropriately.
12. Demonstrated knowledge of ancillary store routine.
13. Demonstrated knowledge of faults and causes in yeast products.
14. Demonstrated ability to display finished products attractively.
15. Applied hygiene practices in the production process.
16. Demonstrated knowledge of record keeping.
 |
| 1. Resource Implications
 | The following resources **must** be provided:2.1 A functional bakery facility  |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written test
	2. Observation
	3. Oral questioning
	4. Interview
	5. Portfolio
	6. Third party report
 |
| 1. Context of Assessment
 | Assessment could be conducted: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 roles is recommended. |

# PRODUCE PASTRY PRODUCTS

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

**UNIT DESCRIPTION**

This unit covers the competencies required to produce pastry products. It involves planning and preparing for production of pastry products, preparing and processing pastry dough, laminating pastry dough, preparing pastry products for baking, preparing and baking selected pastry products and preparing pastry products for display and dispatch.

This standard applies in Baking Industry.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT** | **PERFORMANCE CRITERIA** |
| 1. Plan and prepare for production of pastry products
 | * 1. ***PPEs*** are identified and used as per manufacturers’ instructions.
	2. Hygiene and sanitation requirements are adhered to as per legal requirements workplace policy.
	3. ***Pastry production ingredients*** are identified and requisitioned based on product type.
	4. Pastry production ***tools and equipment*** are identified and assembled based on product type.
	5. Occupational safety and health requirements are observed as per legal requirements***.***
 |
| 1. Prepare pastry dough
 | * 1. Pastry making tools are identified and assembled as per the product type.
	2. Ingredients are weighed based on product type, quantity and method.
	3. Pastry dough is made as per standard operating procedures.
	4. Pastry dough quality is assured as per the required standards.
	5. Pastry dough making tools and equipment are operated as per manufacturers’ manual.
 |
| 1. Laminate pastry dough
 | * 1. Pastry dough lamination tools are identified and used as per manufacturers’ instructions.
	2. Pastry dough is pinned out and pastry margarine applied as per standard operating procedure.
	3. ***Pastry dough is given turns*** as per standard operating procedure and type of product.
 |
| 1. Prepare pastry product for baking
 | 1. Pinned pastry dough is cut, filled and shaped based on product type and customer requirement.
2. Pastry products are panned and proofed as per standard operating procedure.
3. Pastry products are glazed as per product type and customer specification.
 |
| 1. Prepare and bake selected pastry products
 | * 1. Oven is preheated based on type and size of pastry product.
	2. Oven is loaded as per standard operating procedure.
	3. Baking time is set as per product type.
	4. Baking is done as per type of oven and its standard operating procedure.
	5. Pastry product is removed from the oven as per standard operating procedure.
 |
| 1. Prepare pastry product for display and packaging
 | * 1. Pastry product is cooled based on product type, size and standard operating procedure.
	2. ***Faulty pastry products*** are identified and isolated based on pastry product quality standards.
	3. Pastry product is wrapped based on type, customer requirements and legal requirements.
	4. Pastry products are packaged based on type and workplace policy.
	5. Pastry products are stored as per standard operating procedures, workplace policy and legal requirements.
	6. Pastry products are displayed and dispatched based on customer requirements/orders and legal requirements.
	7. Pastry production records are maintained 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.

|  |  |
| --- | --- |
| Variables | Range  |
| 1. Pastry making tools and equipment may include but not limited to:
 | * Ovens
* Flour sieves
* Mixers
* Assorted baking trays
* Beaters
* Spoons
* Wooden spatula
* Scrappers
* Assorted bowls
* Trolleys
* Weighing scales
* Pastry sheeter
* Pastry cutters
* Pastry brush
* Rolling pin
* Thermometer
 |
| 1. Pastry making ingredients may include but not limited to:
 | * Flour
* Fat
* Sugar
* Yeast
* Improvers
* Preservatives
* Coloring
* Assorted fruits
* Pastry margarine
* Eggs
* Salt
* Icing sugar
* Choc chips
* Unsalted butter
 |
| 1. PPEs may include but not limited to:
 | * Aprons,
* Hair nets,
* Safety boots,
* Face masks
* Dust coats
* Chef hats
* Hand gloves
* Oven gloves
 |
| 1. Pastry process faults may include but not limited to:
 | * Oven temperature variation
* Mixing faults
* Folding faults
* Scaling faults
* Proofing faults
* Ingredients faults
* Inappropriate greasing
 |
| 1. Pastry products faults may include but not limited to:
 | * Small volume
* Over baking
* Low shelf life
* Hard crust
* Deformity
* Hard/tough
* Soft and crumbly
* Soggy
* Dull crust
* Crust
* Cracked crust
 |
| 1. Pastry dough turns may include but not limited to:
 | * Half turn
* Full turn
* 3 full turns
 |

**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:

**Generic skills:**

* Communication
* Inter-personal
* Analytical
* Computer
* Problem solving
* Decision making
* Product presentation
* Critical thinking
* Organizing
* Time management

**Technical skills:**

* Pastry dough mixing
* Pastry dough cutting
* Pastry dough sheeting
* Pastry dough turning
* Pastry dough lamination
* Tools and equipment handling
* Product quality analysis
* Flour sieving

**Required Knowledge**

The individual needs to demonstrate knowledge of:

* Legal framework related to food production
* Pastry raw materials
* Methods of pastry making: Types of pastry
* Pastry dough processing techniques
* Baking materials
* Types of pastry products
* Pastry making tools and equipment
* Pastry product faults: causes and remedies
* Pastry production process
* Product knowledge
* Principles of costing
* Principles of sales and marketing
* Waste management
* Food hygiene and sanitation
* Ancillary stores routine
* Quality assurance
* Record keeping
* Basic accounting

**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, selected and gathered tools and equipment for production of pastry products correctly.
2. Identified and selected raw materials for production correctly.
3. Selected pastry making methods appropriately.
4. Demonstrated ability to apply pastry processing techniques.
5. Demonstrated ability to use pastry making tools and equipment correctly and appropriately.
6. Applied logical process, timing and synchronization of production.
7. Used personal protective equipment correctly and appropriately.
8. Demonstrated knowledge of occupational safety, health and hygiene requirements in pastry making.
9. Made pastry products using at least two methods.
10. Produced quality pastry products.
11. Packaged pastry products appropriately.
12. Demonstrated knowledge of ancillary store routine.
13. Demonstrated knowledge of faults and causes in pastry products.
14. Demonstrated ability to display finished pastry products attractively.
15. Applied hygiene practices in pastry production process.
16. Demonstrated knowledge of record keeping.
 |
| 1. Resource Implications
 | The following resources **must** be provided:2.1 A functional bakery facility  |
| 1. Methods of Assessment
 | Competency may be assessed through:* 1. Written test
	2. Observation
	3. Oral questioning
	4. Interview
	5. Portfolio
	6. Third party report
 |
| 1. Context of Assessment
 | Assessment could be conducted:1. On-the-job
2. Off-the–job
3. During industrial attachment
 |
| 1. Guidance information for assessment
 | Holistic assessment with related units in the sector is recommended. |