

**THE REPUBLIC OF KENYA**

**COMPETENCY BASED CURRICULUM**

**FOR**

**BAKING TECHNOLOGY**

**LEVEL 4**

**(PRODUCTION OF YEAST AND PASTRY PRODUCTS)**



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 in 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. 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 this Curriculum has been developed.

It is my conviction that this curriculum 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 and Sessional Paper No 14 of 2012 on Reforming Education and Training in Kenya, emphasized the need toreform curriculum development, assessment and certification. This called for a shift to CBET to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

TVET Curriculum Development, Assessment and Certification Council (TVET CDACC) in conjunction with Cake Bakers and Decorators Sector Skills Advisory Committee (SSAC), Nairobi College of Bread and Confectionery Technology have developed this curriculum.

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

The curriculum is designed and organized with an outline of learning outcomes; suggested delivery methods, training/learning resources and methods of assessing the trainee’s achievement. The curriculum is competency-based and allows multiple entry and exit to the course.

I am grateful to the Council Secretariat, Technical Committee, Cake Bakers and Decorators SSAC, expert workers and all those who participated in the development of this curriculum.

**CHAIRPERSON**

**TVET CDACC**

# ACKNOWLEDGEMENT

This curriculum has been designed for competency-based training and has independent units of learning that allow the trainee flexibility in entry and exit. In developing the curriculum, significant involvement and support was received from various organizations.

I appreciate Nairobi College of Bread and Confectionery Technology and Cake Bakers and Decorators Sector Skills Advisory Committee (SSAC) who enabled the development of this curriculum.

I recognize with appreciation the role of the SSAC in ensuring that competencies required by the industry are addressed in this curriculum. I also thank all stakeholders in the Food Processing sector for their valuable input and all those who participated in the process of developing this curriculum.

I am convinced that this curriculum will go a long way in ensuring that workers in Food Processing sector will acquire competencies that will enable them to perform their work more efficiently.

**COUNCIL SECRETARY/CEO**

**TVET CDACC**

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# ABBREVIATIONS AND ACRONYMS

AIDS Acquired Immune Deficiency Syndrome

BC Basic Competency

CDACC Curriculum Development, Assessment and Certification Council

CR Core Competency

2D Two Dimensional

HIV Human Immuno-Deficiency Virus

BT Baking Technology

FOP Food Processing Industry

ICT Information Communication Technology

LCD Liquid Crystal Display

NEMA National Environmental Management Authority

OSHA Occupation Safety and Health Act

OSHS Occupation Safety and Health Standards

PESTEL Political Economic Social Technological Environmental and Legal

PPE Personal Protective Equipment

SSAC Sector Skills Advisory Committee

SWOT Strengths Weaknesses Opportunities and Threats

TVET Technical and Vocational Education and Training

# KEY TO UNIT CODE

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

Industry or sector

Curriculum

Occupational area

Type of Unit

Unit number

Competency level

Version control

# COURSE 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 learning comprising Baking Technology Level 4 qualification include the following:

**Basic Units of Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** | **Credit factor** |
|  FOP/CU/BT/BC/01/4/A | Communication Skills | 20 | 2.0 |
|  FOP/CU/BT/BC/02/4/A | Numeracy Skills | 25 | 2.5 |
|  FOP/CU/BT/BC/03/4/A | Digital Literacy | 35 | 3.5 |
|  FOP/CU/BT/BC/04/4/A | Entrepreneurial Skills | 60 | 6.0 |
|  FOP/CU/BT/BC/05/4/A | Employability Skills | 30 | 3.0 |
|  FOP/CU/BT/BC/06/4/A | Environmental Literacy | 20 | 2.0 |
|  FOP/CU/BT/BC/07/4/A | Occupational Safety and Health Practices | 20 | 2.0 |
| **Total** | **210** | **21.0** |

**Common Units of Learning**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** | **Credit factor** |
|  FOP/CU/BT/CC/01/4/A | Bakery Raw Materials  | 30 | 3.0 |
|  FOP/CU/BT/CC/02/4/A | Bakery Plant and Equipment | 30 | 3.0 |
| **Total**  | **60** | **6.0** |

**Core** **Units of Learning (Elective)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Code** | **Unit Title** | **Duration in Hours** | **Credit factor** |
| FOP/CU/BT/CR/01/4/A | Produce Yeast Products | 120 | 12.0 |
| FOP/CU/BT/CR/02/4/A | Produce Pastry Products | 120 | 12.0 |
| FOP/CU/BT/CR/03/4/A | Industrial Attachment | 300 | 30.0 |
| **Total** | **540** | **54.0**  |
|  **Grand total** | **810** | **81.0** |

The total duration of the course is **810 hours** including 300 hours industrial attachment.

**Entry Requirements**

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

1. Kenya Certificate of Secondary Education (KCSE)

**Or**

1. Certificate in Baking Technology Level 3

**Or**

1. Equivalent qualifications as determined by Kenya National Qualifications Authority (KNQA)

**Industrial attachment**

An individual enrolled in this course will undergo industrial attachment for a period of 300 hours in a Bakery establishment.

**Trainer qualification**

The trainer for these course must have a qualification higher than these course

**Assessment**

The course will be assessed at two levels:

1. **Internal assessment**: conducted continuously by the trainer (internal assessor) who is monitored by an accredited internal verifier.
2. **External assessment:** conducted by an accredited external assessor who is monitored by an accredited external verifier.

The assessors and verifiers are accredited by TVET CDACC which also coordinates external assessment.

**Certification**

An individual will be awarded a Certificate of Competency on demonstration of competence in a unit of competency. To be awarded National certificate in Baking Technology Level 4, an individual must demonstrate competence in all the units of competency.

These certificates will be awarded by TVET CDACC in conjunction with the training provider.

# BASIC UNITS OF LEARNING

# COMMUNICATION SKILLS

**UNIT CODE:** FOP/CU/BT/BC/01/4/A

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Communication Skills

**Duration of Unit:** 20 Hours

**Unit Description**

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

**Summary of Learning Outcomes**

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

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

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

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# NUMERACY SKILLS

**UNIT CODE:** FOP/CU/BT/BC/02/4/A

**Relationship to Occupational Standards:**

This unit addresses the Unit of Competency: Demonstrate Numeracy Skills

**Duration of Unit:** 25hours

**Unit Description**

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

**Summary of Learning Outcomes**

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

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Identify and use whole numbers and simple fractions, decimals and percentages for work
 | * Whole numbers
* Simple fractions
* Decimals
* Percentages
* Sizes
* Problem solving methods
* Calculations using the 4 operations
* Recording and communicating numerical information
 | * Written
* Practice assignments

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

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# DIGITAL LITERACY

**UNIT CODE:** FOP/CU/BT/BC/03/4/A

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Digital Literacy

**Duration of Unit:** 35 hours

**Unit Description**

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

**Summary of Learning Outcomes**

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

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

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

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# ENTREPRENEURIAL SKILLS

**UNIT CODE:** FOP/CU/BT/BC/04/4/A

**Relationship to occupational standards**

This unit addresses the Unit of Competency: Demonstrate Entrepreneurial Skills

**Duration of unit:** 60 hours

**Unit description**

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

**Summary of Learning Outcomes**

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

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

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

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# EMPLOYABILITY SKILLS

**UNIT CODE:** FOP/CU/BT/BC/05/4/A

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Employability Skills

**Duration of Unit:** 30 hours

**Unit Description**

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

**Summary of Learning Outcomes**

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

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

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

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# ENVIRONMENTAL LITERACY

**UNIT CODE:** FOP/CU/BT/BC/06/4/A

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate Environmental Literacy

**Duration of Unit:** 20hours

**Unit Description**

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

**Summary of Learning Outcomes**

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

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

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

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# OCCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE:** FOP/CU/BT/BC/05/4/A

**Relationship to Occupational Standards**

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

**Duration of Unit:** 20 hours

**Unit Description**

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

**Summary of Learning Outcomes**

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

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

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

**Suggested Methods of Instruction**

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

**Recommended Resources**

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

# COMMON UNITS OF LEARNING

# BAKERY RAW MATERIALS

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Demonstrate knowledge of bakery raw material

**Duration of Unit:** 30 hours

**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.

**Summary of Learning Outcomes**

Demonstrate knowledge of:

1. Wheat flour used in baking
2. Other flours used in baking
3. Leavening agents used in baking
4. Fats and oils used in baking
5. Moistening agents used in baking
6. Sweeteners used in baking
7. Flavouring and colouring agents used in baking
8. Additives used in baking
9. Fruits and nuts used in baking
10. Packaging materials used in baking

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Demonstrate knowledge of wheat flour as a bakery raw material
 | Wheat flour:* Composition of wheat
* Types of wheat flour
* Flour characteristics
* Flour physical properties
* Flour storage
 | * Written tests
* Observation
* Interviewing
 |
| 1. Demonstrate knowledge of other flours used in baking
 | Other flours used in baking:* Identification
* Characteristics
* Uses and functions
* Physical properties
 | * Written tests
* Observation
* Interviewing
 |
| 1. Demonstrate knowledge of leavening agents as raw materials in baking
 | Leavening agents:* Introduction
* Types
* Physical properties
* Uses and functions
* Storage
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of fats and oils as raw materials in baking
 | Fats and oils* Definition
* Sources
* Types of fats and oils
* Spoilage and preservation
* Uses and functions
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of moistening agents as raw materials in baking
 | Moistening agents:* Definition of terms
* Types
* Characteristics
* Uses in bakery
* Storage
* Processing of moistening agents
 | * Written tests

Interviewing |
| 1. Demonstrate knowledge of sweeteners as raw materials in baking
 | Sweeteners:* Definition of terms
* Sources
* Types
* Processing
* physical properties
* Functions in bakery
* Storage
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of flavouring and colouring agents as raw materials in baking
 | Flavouring and colouring agents* Definition
* Sources
* Types
* Uses/roles in baking
* physical components
* Storage
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of additives as raw materials in baking
 | Additives:* Definition
* Sources
* Types
* Characteristics
* Uses/roles
* Storage
* Biological properties
 | * Written tests

Interviewing |
| 1. Demonstrate knowledge of fruits and nuts as raw materials in baking
 | Fruits and nuts:* Types
* Characteristics
* Uses /roles
* Physical properties
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of packaging materials used in baking
 | Packaging materials:* Types and sizes
* Quality
 | * Written tests
* Interviewing
 |

**Suggested Methods of Instruction:**

* Direct instruction
* Assignments
* Field trips
* Discussions
* Demonstration by trainer
* Practice by trainee

**List of Recommended Resources:**

* Computers
* Stationery
* Internet
* Projectors
* Charts
* Assorted samples of baking raw materials
* Labortory resources:
	+ Reagents
	+ Apparatus
	+ Assorted samples

# BAKERY PLANT AND EQUIPMENT

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

**Relationship to Occupational Standards**

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.

**Duration of Unit:** 30 hours

**Unit Description**

This unit covers the competencies required to demonstrate knowledge of plant lay-out, equipment and machinery, maintenance, hygiene, safety and security.

**Summary of Learning Outcomes**

Demonstrate knowledge of:

1. Plant lay-out
2. Equipment and machinery
3. Hygiene
4. Safety
5. Security

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Demonstrate knowledge of bakery plant lay-out
 | **Bakery plant lay-out** * Introduction
* Bakery siting and location
* Sections in a bakery plant
* Flow charts
* Legislation
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of bakery equipment and machinery
 | **Bakery equipment and machinery*** Definition of terms
* Selection
* Use and care
* Emerging equipment and machinery
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of bakery hygiene
 | **Bakery hygiene** * Importance
* Basic hygiene rules
* Cleaning agents
* Cleaning materials and equipment
* Cleaning of different surfaces
* Legislation
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of safety in the bakery
 | **Bakery safety*** Requirements
* Precautions
* Fire safety
* First aid
* Legislation
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of security in the bakery
 | Bakery security * Importance
* Security systems
* Personnel
 | * Written tests
* Interviewing
 |
| 1. Demonstrate knowledge of bakery tools and equipment inventory management
 | * Tools and equipment inventory
* Issuing of tools and equipment
* Receiving of tools and equipment
* Storage
 | * Written tests
* Interviewing
 |

**Suggested Methods of Instruction:**

* Direct instruction
* Assignments
* Field trips
* Discussions

**List of Recommended Resources:**

* Computers
* Stationery
* Internet
* Charts

# CORE UNITS OF LEARNING

# PRODUCTION OF YEAST PRODUCTS

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Produce yeast products

**Duration of Unit:** 120 hours

**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.

**Summary of Learning Outcomes:**

1. Plan and prepare for production of yeast products
2. Prepare yeast dough
3. Process dough for baking
4. Prepare oven for baking yeast product
5. Prepare yeast products for display and dispatch
6. Prepare and bake selected yeast products

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

|  |  |  |
| --- | --- | --- |
| **Learning Outcome** | **Content** | **Suggested Assessment Methods** |
| 1. Plan and prepare for production of yeast products
 |  Introduction to baking of yeast products* Definition of terms
* Safety in the bakery
* Food hygiene and sanitation
* Yeast products ingredients
* Yeast products preparation methods
* Types of yeast products
* Legal framework relating to baked products
* Costing of products
* Sustainable resource use
* Waste management
 | * Written test
* Observation
* Oral questioning
* Interview
* Third party report
 |
| 1. Prepare yeast dough
 | * Yeast product recipe balancing
* Yeast products ingredients
* Tools and equipment for dough making and their uses
* Methods of dough preparation
* Dough preparation faults: causes and remedies
 | * Observation
* Written tests
* Oral questioning
* Interview
* Third party report
 |
| 1. Process dough for baking
 | * Tools and equipment for dough processing
* Processing of dough
	+ Dough fermentation
	+ Dough scaling
	+ Dough moulding
	+ Dough panning
	+ Dough proofing
* Dough processing faults: Causes and remedies
 | * Observation
* Written test
* Oral questioning
* Interview
* Third party report
 |
| 1. Prepare and bake selected yeast products
 | * Baking of yeast products
* Recipe balancing/adjustment
* Weighing ingredients
* Ingredients mixing
* Dough fermentation
* Dough scaling
* Dough moulding
* Dough panning
* Dough proofing
* Baking the yeast products
* Prepare yeast product for display and dispatch

NB: Yeast products that MUST be produced:* Plain bread
* Wholemeal bread
* Sweet enriched bread
* Scones
* Buns
* Rolls
* Special breads
 | * Observation
* Oral questioning
* Third party report
 |
| 1. Prepare oven for baking yeast product
 | * Baking tools and equipment
* Oven setting and control
* Baking faults in yeast products: Causes and remedies
 | * Observation
* Written test
* Oral questioning
* Interview
* Third party report
 |
| 1. Prepare yeast products for display and dispatch
 | * Tools and equipment used in preparing yeast products for display and dispatch
* Materials for wrapping and packaging yeast products
* Slicing of bread
* Packaging of various yeast products
* Storage of yeast products
 | * Observation
* Written test
* Oral questioning
* Interview
* Third party report
 |

**Suggested Methods of Instruction:**

* Direct instruction
* Field trips
* Discussions
* Demonstration by trainer
* Practice by the trainee

**List of Recommended Resources:**

* Stationery
* Raw materials
	+ Flour
	+ Fat
	+ Sugar
	+ Yeast
	+ Improvers
	+ Preservatives
	+ Flavors
	+ Colouring
	+ Assorted fruits
* Tools and equipment
	+ Ovens
	+ Mixers
	+ Bowls
* Energy
	+ Gas
	+ Electricity
	+ Oil
	+ Charcoal
	+ Wood
	+ Solar
* Water
	+ Piped water
	+ Purified water
* Baking plant
	+ Automatic
	+ Semi-automatic
	+ Batch production
	+ Manual
* General supplies
* Cleaning materials
* PPEs
* Aprons,
* Hair nets,
* Safety boots,
* Face masks
* Dust coats
* Chef hats
* Hand gloves

Oven gloves

#  PASTRY PRODUCTION

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

**Relationship to Occupational Standards**

This unit addresses the Unit of Competency: Produce pastry products

**Duration of Unit:** 120 hours

**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.

**Summary of Learning Outcomes**

1. Plan and prepare for production of pastry products
2. Prepare and process pastry dough
3. Laminate pastry dough
4. Prepare pastry product for baking
5. Prepare and bake selected pastry products
6. Prepare pastry products for display and dispatch

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

|  |  |  |
| --- | --- | --- |
| **Learning Outline** | **Content**  | **Suggested Assessment Methods** |
| 1. Plan and prepare for production of pastry products
 | * Introduction to baking of pastry products
* Definition of terms
* Safety in the bakery
* Food hygiene and sanitation
* Pastry products ingredients
* Pastry products preparation methods
* Types of pastry products
* Legal framework relating to baked products
* Principles of Costing
* Sustainable resource use
* Waste management
 | * Written tests
* Oral questioning
* Interview
* Portfolio
* Third party report
 |
| 1. Prepare pastry dough
 | * Pastry product recipe balancing
* Pastry products ingredients
* Tools and equipment for pastry dough making and their uses
* Methods of pastry dough preparation
* Pastry dough preparation faults: causes and remedies
 | * Written tests
* Oral questioning
* Interview
* Portfolio
* Third party report
 |
| 1. Laminate pastry dough
 | * Tools and equipment for pastry dough lamination
* Pastry dough lamination procedure
* Pastry dough lamination faults: Causes and remedies
 | * Written tests
* Oral questioning
* Interview
* Portfolio
* Third party report
 |
| 1. Prepare pastry product for baking
 | * Oven setting and control
* Pastry product preparation tools and equipment
* Cutting pastry dough
* Filling/stuffing of pastry products
* Faults in preparation of pastry

products: Causes and remedies | * Written tests
* Oral questioning
* Interview
* Portfolio
* Third party report
 |
| 1. Prepare and bake selected pastry products
 | * Baking of pastry products
* Recipe balancing/adjustment
* Weighing ingredients
* Ingredients mixing
* Pastry dough preparation
* Pastry dough lamination
* Pastry dough cutting
* Pastry dough filling/stuffing
* Glazing pastry products
* Baking the pastry products
* Prepare pastry products for display and dispatch

NB: Pastry products to be covered* Puff
* Danish
* Short
* Choux
* Sweet
 | * Observation
* Portfolio
* Written tests
* Oral questioning
* Interview
* Portfolio
* Third party report
 |
| 1. Prepare pastry product for display and packaging
 | * Tools and equipment used in preparing pastry products for display and dispatch
* Materials for wrapping and packaging pastry products
* Packaging and displaying of various pastry products
* Storage of pastry products
 | * Written tests
* Oral questioning
* Interview
* Portfolio
* Third party report
 |

**Suggested Methods of Instruction:**

* Direct instruction
* Field trips
* Discussions
* Demonstration by trainer
* Practice by the trainee

**List of Recommended Resources:**

* Computers,
* Stationery,
* Raw materials
	+ Flour
	+ Fat
	+ Sugar
	+ Yeast
	+ Improvers
	+ Preservatives
	+ Colouring
	+ Assorted fruits
	+ Pastry margarine
	+ Eggs
	+ Salt
* Tools and equipment
	+ Ovens
	+ Mixers
	+ Bowls
	+ Weighing scales
	+ Pastry sheeter
	+ Pastry cutters
	+ Pastry brush
	+ Rolling pin
	+ Thermometer
* Energy
	+ Gas
	+ Electricity
	+ Oil
	+ Charcoal
	+ Wood
* Water
	+ Piped water
	+ Chilled water
* PPEs:
	+ Aprons,
	+ Hair nets,
	+ Safety boots,
	+ Face masks
	+ Dust coats
	+ Chef hats
	+ Hand gloves
	+ Oven gloves
* General Supplies:
	+ Cleaning materials
	+ Laboratory materials and reagents
	+ Packaging materials