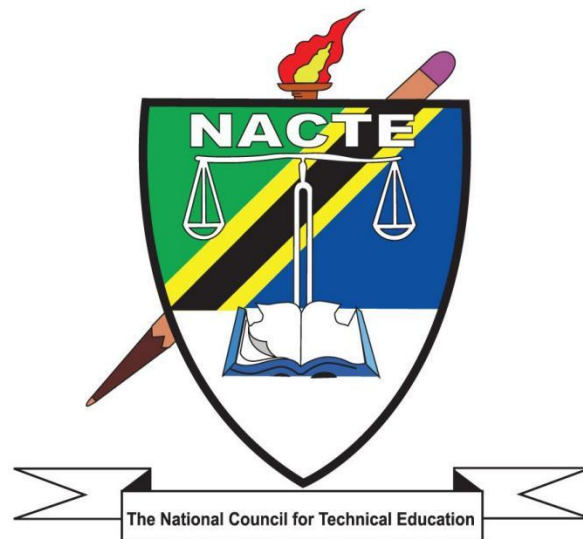


NATIONAL COUNCIL FOR TECHNICAL EDUCATION



November 2022

PROPOSED OCCUPATIONAL STANDARDS

OCCUPATION: FOOD SCIENCE AND TECHNOLOGIST

LEVEL: NTA 8

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FOREWORD

The National Council for Technical Education (NACTE) is a corporate body established by the National Council for Technical Education Act, Cap.129. The Act provides a legal framework for the Council to coordinate the provision of technical education and training in Tanzania. The mandate of NACTE is three-fold, namely; Regulatory, Quality Assurance and Policy Advisory.

In discharging its mandate, the Council has been charged with the responsibilities, among others, to:

- (a) assist technical institutions in the transmission of knowledge, principles and training in the field of technical education and training for the benefit of the people of Tanzania;
- (b) assist technical institutions in the overall development of the quality of education they provide and encourage them to uphold approved academic standards;
- (c) establish and make awards in technical education which are consistent in standard and comparable to related awards in Tanzania and internationally; and
- (d) ensure that the required level of education for these awards is met throughout the course's delivery period while maintaining its quality.

In the course of execution of these responsibilities, the Council has been instituting various measures aiming at advancing the quality of training provided in technical institutions in respect of the changing demands of the labour market, both local and international.

To achieve the above obligation, NACTE, under the Ministry of Education, Science and Technology implemented the East Africa Skills for Transformation and Regional Integration Project (EASTRIP), a project aiming at promoting regional integration through supporting the regional corridors and sector markets, developing common standards and qualifications, and promoting mobility of students, faculty, and graduates. The project supports the Government of Tanzania to address shortage of skills in five sectors namely:

- (a) Energy;
- (b) Construction;
- (c) Information and Communication Technology (ICT);
- (d) Transportation; and
- (e) Agribusiness.

To address the skills, miss-match and shortage in the five (5) sectors of the country, the project funded, among others, a component of Development of Occupational Standards for Technical and Vocational Education and Training (TVET). In this regard, NACTE endeavoured to identify qualified and highly experienced experts from both industry and training institutions to carry out the development of Occupational Standards at Morogoro Teachers College, Morogoro from 27th August to 24th September, 2021. The output of the exercise is Occupational Standards for 14 occupations, which include related Occupational standards for Renewable Energy.

Since Occupational Standards are statements of work performance reflecting the ability to successfully complete the functions required in an occupation, as well as the application of knowledge, skills, attitudes and understanding in an occupation, it is the Council's expectations that the developed standards will form a robust base for decision making and provide explicit guidance to policy makers, curriculum developers, educators, employers and other stakeholders in matters related to manpower planning as well as execution of Technical and Vocational Education and Training undertakings.

Prof. J. W. Kondoro
CHAIRMAN

Dar es Salaam
November 2022

ACKNOWLEDGEMENT

The National Council for Technical Education (NACTE) is charged with the mandate to be the Quality Assurance organ of the Government in matters related to Technical and Vocational Education and Training (TVET) and production of qualified manpower for both local and international labour markets. In order to realize this obligation, NACTE endeavours to institute policies, guidelines and standards and to set the quality benchmarks for training institutions.

However, this is only possible if there is a strong base, linking the training institutions on one hand and the demands of the industry/labour market for relevant manpower on the other hand. Therefore, the Council undertook a step to develop Occupational Standards in sectors considered to be the engine to steer the country's desire to achieve an industrial economy. This exercise would not be a success without the input and support from our stakeholders. I am indebted to acknowledge some of them here.

I wish to acknowledge and appreciate the support from the Ministry of Education, Science and Technology through the East Africa Skills for Transformation and Regional Integration Project (EASTRIP) for the financial support which facilitated the preparation of this document. I wish also to appreciate Mrs Leah Lukindo and Eng. Dr. Simon Baregu for the tireless efforts and commitment in facilitating and guiding the standards development process, Ms. Eileen Tzamburakis, Ms. Chausiku Yakweli Ibrahim and Ms. Nuru Shirima for compiling and type setting the final document; and the NACTE Secretariat for coordinating the whole activity.

In a very special way, I wish further to extend my sincere gratitude to this team of wonderful experts who tirelessly dedicated their time and availed their invaluable intellect in the preparation of this document. I would like to recognise the colossal inputs of the following experts:

S/N	Name	Designation	Organization
1	Eng. Decklan P. Mhaiki	Chief Technical Advisor	Tanzania Electric Supply Company Limited (TANESCO)
2	Eng. Sophia Mgonja	Chief Technical Advisor	Tanzania Electric Supply Company Limited

S/N	Name	Designation	Organization
			(TANESCO)
3	Eng. Msherwa John	Principal Coordinator	The National Council for Technical Education (NACTE)
4	Eng. Mary K. Mhayaya	Consulting Engineer	Tanzania Ports Authority (TPA)
5	Dir. Erick Mgaya	Senior Lecturer	Arusha Technical College (ATC)

Dr. A. B. Rutayuga

EXECUTIVE SECRETARY

Dar es Salaam

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ABBREVIATIONS

CCPs	Critical Controlling points
FEFO	First Expiry First Out
FIFO	First In First Out
GHP	Good Hygiene Practices
GLP	Good Laboratory Practices
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis Critical Control Points
ISO	Internal standards Organization
OPRPs	Operational Prerequisite programmes
PRPs	Prerequisite programmes
TACCP	Threat Analysis Critical Control Point
VACCP	Venerability Critical control Point
NACTE	National Accreditation Council of Technical Education
NOS	National Occupational Standards
OS	Occupational Standards
TET	Technical Education and Training
TVET	Technical and Vocational Education and Training

GLOSSARY OF TERMS

Circumstantial knowledge:	Detailed knowledge, which allows the decision-making in regard to different circumstances and cross-cutting issues
Competence:	The ability to use knowledge, understanding, practical and thinking skills to perform effectively to the workplace standards required in employment.
Competency:	A description of the ability one possesses when able to perform a given occupational task effectively and efficiently.
Competency-based education:	An instructional programme that derives its content from validated tasks and bases assessment on the learner's performance
Curriculum:	A description or composite of statements about “what is to be learned” by the trainee/student in a particular instructional programme; a product that states the “intended learning outcomes”.
Educational/Training programme:	The complete curriculum and instruction (what and how) that is designed to prepare a person for employment in a job or other particular performance situation.
Occupation:	A specific position requiring the performance of specific tasks – essentially the same tasks are performed by all employees having the same title. (Example: baker)
Occupational analysis:	A process used to identify the tasks that are important to employees in any given occupation
Occupational area	This is a broad grouping of related jobs. Example: food service
Occupational Standards:	Specific requirements of competences people are expected to demonstrate in a particular occupational area, including

knowledge and relevant attitudes. They also act as performance tool of assessment of the pre – scribed outcomes.

Occupational/job analysis: A process used to identify the tasks that are important to employees in any given occupation.

Performance criteria: Indicate the expected end results or outcome in form of evaluative statements.

Skills: The ability to perform occupational tasks with a high degree of proficiency within a given occupation. Skill is conceived of as a composite of three completely interdependent components: cognitive, affective, and psychomotor.

Standards: it is a set of statement, which if proved true under working conditions, means that an individual is meeting an expected level and type of performance

Task analysis: The process of analysing each task to determine the steps, related knowledge, attitudes, performance standards, tools and materials needed, and safety concerns required of employees performing it.

Tasks: A work activity that has a definite beginning and ending, is observable or measurable, consists of two or more definite steps, and leads to a product, service, or decision.

Underpinning Knowledge: This is crucial knowledge that an individual must acquire in order to demonstrate competences that are associated in performing a given task.

Verification process: The process of having experts review and conform the importance of the task (competency) statements identified through occupational analysis. Other questions, such as the degree of task learning difficulty are also frequently asked.

This process is also sometimes referred to as validation.

Occupational Competence: The application of knowledge and skills to perform consistently to the standards required in the work context.

1.0. INTRODUCTION

Technical Education and Training (TET) is one of the most important education sub-sectors in Tanzania, responsible for developing a skilled workforce to support the country's industrialization economic agenda. Tanzania's Development Vision 2025 intends to raise the country's economy to a middle-income status, which necessitates a skilled workforce aligned with the needs of both public and private sectors of the economy. To ensure that TET meets needs of the labour market and the country's economic agenda, the National Council for Technical Education has begun drafting Occupational Standards that will eventually be adopted as National Occupational Standards.

National Occupational Standards (NOS) are performance criteria designed to meet labour market demands. Each National Occupation Standard outlines functions, performance standards, and knowledge/understanding for one important function or task. They combine skills, knowledge, and attitudes to describe best practices. NOSs are useful tools for establishing job roles, personnel recruiting, supervision, and appraisal, as well as TET standards. They're also helpful for benchmarking and harmonizing qualifications on a national and international level. Standards, in general, provide a solid framework for high-quality TET that is labour market-relevant, current and consistent in delivery across all public and private institutions.

It is important to note that Occupational Standards and Training standards/qualifications standards are different. Occupational standards are defined in terms of activities performed by a person in a selected occupation (e.g., an electrical engineer designs electrical wiring circuits, performs trouble shooting in electrical wiring, etc.) and they are usually defined by employers following procedures agreed upon by all stakeholders. Training standards are developed from the activities defined in occupational standards, and they include learning objectives to ensure that the necessary skills and knowledge are developed by a person to enable him or her to function at an agreed level in an occupation. Training standards are used to design curricula in training institutions. However, it is essential there must be a direct link between the Occupational standards and the Training standards to respond to demands of the labour market.

In TET delivery, Tanzania adopted the Competence Based Education and Training (CBET) approach. The CBET approach focuses on providing learners with the skills and knowledge required to meet the occupational standards. Occupational standards are thus the starting point for

developing CBET programmes. TET institutions will be required to benchmark their curricula with relevant occupational standards.

Occupational Standards are developed based on the current and future demands of a given occupation. As a result, they serve as a means of bridging the gap between the worlds of employment and technical education and training (TET).

The Food Technologist Occupation has its own set of occupational standards. This document explains how the occupational standards were developed, as well as the scope, the occupational profile in the form of DACUM charts, and the Occupational Standards.

2.0. OCCUPATIONAL STANDARD DEVELOPMENT PROCESS

The process of Occupational standards development began with an examination of major documents that guide Tanzanian skill development. The National Skills Development Strategy (NSDS) 2016-2026 was one of the documents reviewed, and it outlined six (6) economic sectors that should be prioritised when developing skills development programmes. These sectors include: Transport and logistics, Tourism and Hospitality, Agribusiness, Construction, Energy and ICT. NACTE labour market reports were also used in the literature review to determine the skills demand in the Tanzanian labour market as a whole.

After the literature review, a workshop comprising expert workers and educators with substantial knowledge and experience in the occupation conducted an occupational analysis utilizing the DACUM approach to produce the occupational profile. The analysis resulted in DACUM Charts, which are attached as **Appendix 1** to this document.

The workshop thereafter continued with the development of occupational standards and was facilitated by experts in Occupational Analysis and development of Occupational Standards. Interviews, online surveys, and a stakeholder forum were used to validate the occupational standards. Technologists, supervisory technicians on the job, and experienced Food Technologists and Scientists were key informants in the survey to establish occupational trends. This information was used to gain insight from the workplaces regarding trends and changes in the profession, including how well graduates are equipped for working in the occupation. A total of online surveys were completed by experts from the labour market across the country. Apart from aiding in defining the scope for the occupational analysis, the survey also served to engage a

wide cross-section of experts in the occupation. The stakeholder forum was attended by participants from different parts of the country representing various companies.

3.0. THE SCOPE AND OVERVIEW OF THE OCCUPATION STANDARDS FOR FOOD TECHNOLOGIST

The Food Technologist plays an important role in areas such as food industries, food laboratories and food retailing, in ensuring quality and safety of the food product as per governing standards and procedures to attain compliance. Food Technologists are responsible for the safety and quality of products that thousands of people could eat every day. This is a big responsibility, especially with the increasing prevalence of specific dietary requirements. Food Technologists also source raw materials for food products, as well as finding the best way to combine, process, store and preserve food in order to maintain taste and nutritional value. Food technologists make sure food products are produced safely, legally and to the desired quality. The standard covers the main duties of a Food Technologist as follows:

- a) Monitor quality control in food manufacturing process
- b) Monitor food product costing
- c) Oversee food packaging materials
- d) Monitor document management programme
- e) Develop new food product
- f) Improve the existing food products
- g) Establish the layout of food premises
- h) Monitor the management system
- i) Oversee food manufacturing process
- j) Participate in preparation of food standards

The occupational standards have been clustered into NTA qualification levels i.e. NTA levels 7 and 8.

4.0. VALIDITY PERIOD

The occupational standards will be valid for 3-5 years due to the fast-changing nature of technology. The review will proceed in the same manner as the previous one, with new occupational standards being developed based on current labour market Information.

5.0. OCCUPATIONAL STANDARDS

5.1. OCCUPATIONAL STANDARDS FOR FOOD SCIENCE AND TECHNOLOGIST – NTA 8

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	DEVELOP NEW FOOD PRODUCT	DUTY NO	801
TASK TITLE	GENERATE CONCEPT OF A NEW FOOD PRODUCT	TASK NO	8011
PERFORMANCE CRITERIA	The person performing this task must be able to generate a concept of a new food product as per approved food manufacturing and processing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following: 1. Present concept of new food product; 2. Conduct market survey to obtain food product information ; 3. Analyse food product information obtained from market survey; 4. Compare the new idea with related existing product information; 5. Prepare a report of findings and conclusion; 6. Document the market survey information records; 7. Clean work area.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Conduct market survey to obtain food product information; 1.2. Analyse market survey food product information; 1.3. Prepare market survey report findings and concussion. 2.0. Principles The person must be able to explain the principles of: 2.1. New product development; 2.2. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food product development; 3.2. Food technology; 3.3. Food nutrition; 3.4. Food biotechnology; 3.5. Food enzymology ; 3.6. Food packaging and labelling ; 3.7. Market research; 3.8. Market survey; 3.9. Document management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management;	

	4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	New food product concept is developed as per food products standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	DEVELOP NEW FOOD PRODUCT	DUTY NO.	801
TASK TITLE	ESTABLISH FORMULA FOR NEW FOOD PRODUCT	TASK NO.	8012
PERFORMANCE CRITERIA	The person performing this task must be able to establish a formula for a new food product as per food manufacturing and processing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE)		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following: 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Identify suitable ingredients for new food product; 4. Obtain the ingredients; 5. Verify the ingredients formulation; 6. Conduct processing trials; 7. Conduct new food product quality testing; 8. Establish new food product formula; 9. Process the food product to verify new formula; 10. Perform packaging of new food product; 11. Document new product formula; 12. Clean work area, tools and equipment; 13. Store tools and equipment; 14. Dispose waste.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify suitable ingredients for new food product ; 1.2. Verify the ingredients for new food product; 1.3. Conduct new food product quality testing; 1.4. Perform new food product packaging; 1.5. Document and present formula for the new product. 2.0. Principles The person must be able to explain the principles of: 2.1. New product development; 2.2. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. New product development procedures; 3.2. Food chemistry; 3.3. Food analysis and instrumentation; 3.4. Food technology; 3.5. Food nutrition; 3.6. Food biotechnology; 3.7. Food enzymology; 3.8. Food packaging and labelling ; 3.9. Document management 3.10. Food laws, regulations and relevant standards. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills;	

	4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Formula for new food product is established as per food products standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	DEVELOP NEW FOOD PRODUCT	DUTY NO.	801
TASK TITLE	CONDUCT PILOT PLANT TESTING	TASK NO	8013
PERFORMANCE CRITERIA	The person performing this task must be able to conduct pilot plant testing for the new food product as per approved food manufacturing and processing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE) .		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following: 1. Select right tools, equipment and safety gear for the task; 2. Establish food product process flow; 3. Identify the required process machinery and equipment ; 4. Obtain process machinery and equipment ; 5. Verify purchased machinery and equipment; 6. Establish process monitoring parameters; 7. Run trial manufacturing process; 8. Make necessary adjustment to the food manufacturing process to meet specifications; 9. Perform quality tests of the food product; 10. Validate the process; 11. Document pilot plant testing report; 12. Clean work area, tools and equipment.; 13. Store tools and equipment; 14. Dispose waste.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Establish food product process flow; 1.2. Identify process machinery and equipment needed; 1.3. Establish process monitoring parameters; 1.4. Document and present pilot plant testing report. 2.0. Principles The person must be able to explain the principles of: 2.1. New product development; 2.2. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food product development; 3.2. Food chemistry; 3.3. Food technology; 3.4. Food nutrition; 3.5. Food biotechnology; 3.6. Food enzymology ; 3.7. Food packaging and labelling; 3.8. Data analysis; 3.9. Food analysis and instrumentation; 3.10. Document management. 4.0. Essential skills 4.1. Computer skills;	

	4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Pilot plant testing for the new food product is conducted according to food manufacturing standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	DEVELOP NEW FOOD PRODUCT	DUTY NO.	801
TASK TITLE	MANAGE PRODUCT QUALITY TESTING	TASK NO.	8014
PERFORMANCE CRITERIA	The person performing this task must be able to manage food product quality testing as per approved food manufacturing and processing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following: 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Establish food quality testing method; 4. Establish laboratory testing tools, equipment and reagents; 5. Identify physical, chemical, biological and allergen testing parameters; 6. Monitor food product quality product testing ; 7. Review food product quality testing procedures; 8. Document and present food quality testing report; 9. Clean work area, tools and equipment; 10. Store tools and equipment; 11. Dispose waste.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how 1. 1 Establish food quality product testing methods; 1. 2 Establish laboratory testing tools, equipment’s and reagents as per standard methods; 1. 3 Monitor food product quality testing; 1. 4 Document and present food quality testing report. 2.0. Principles The person must be able to explain the principles of: 2.1. Good laboratory practices; 2.2. Good hygiene practices (GHP); 2.3. FEFO and FIFO; 2.4. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food chemistry; 3.2. Food technology; 3.3. Food nutrition; 3.4. Food biochemistry; 3.5. Food biotechnology; 3.6. Food enzymology; 3.7. Food packaging and labelling; 3.8. Food analysis and instrumentation; 3.9. Document management; 3.10. Food laws, regulations and relevant standards. 4.0. Essential skills	

	4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking; 4.9. Report writing.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Food product quality testing is managed as per food manufacturing standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	DEVELOP NEW FOOD PRODUCT	DUTY NO.	801
TASK TITLE	ESTABLISH FOOD PRODUCT SPECIFICATIONS	TASK NO.	8015
PERFORMANCE CRITERIA	The person performing this task must be able to establish food product specifications as per approved standards governing food manufacturing and products.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
The person performing this task must be able to perform the following: 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Determine food product composition; 4. Identify food products nutritional index level; 5. Verify food product nutritional level with local national and international standards; 6. Prepare food product specifications; 7. Review food product specifications periodically; 8. Document food product specifications record; 9. Clean work area, tools and equipment; 10. Store tools and equipment; 11. Dispose waste.	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Determine food product composition; 1.2. Identify food products nutritional values; 1.3. Verify food product nutritional level with local national and international standards; 1.4. Prepare food products specifications; 1.5. Document and present food products specifications. 2.0. Principles The person must be able to explain the principles of: 2.1. Good laboratory practices (GLP); 2.2. Good hygiene practices (GHP); 2.3. FEFO and FIFO; 2.4. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food chemistry; 3.2. Food technology; 3.3. Food nutrition; 3.4. Food biotechnology; 3.5. Food enzymology; 3.6. Food packaging and labelling; 3.7. Food biochemistry; 3.8. Food analysis and instrumentation; 3.9. Document management.		

	4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Specifications of food product are established as per approved food standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MODIFY EXISTING FOOD PRODUCT	DUTY NO.	802
TASK TITLE	EVALUATE CURRENT FOOD PROCESSING METHOD	TASK NO.	8021
PERFORMANCE CRITERIA	The person performing this task must be able to evaluate current food processing method as per approved food manufacturing and processing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following: 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Establish current food processing method; 4. Identify current food processing technology gaps; 5. Analyse identified technology gaps; 6. Verify the identified technology gaps; 7. Evaluate the technological gaps; 8. Prepare an evaluation report; 9. Clean work area, tools and equipment; 10. Store tools and equipment; 11. Dispose waste.		Detailed knowledge about: 1.0. Methods This person performing this task must be able to explain how to: 1.1. Identify current food processing technology gaps; 1.2. Analyse current food processing technology gaps; 1.3. Verify current food processing technology gaps; 1.4. Document food processing technology evaluation report. 2.0. Principles The person must be able to explain the principles of: 2.1. Good laboratory practices (GLP); 2.2. Good hygiene practices (GHP); 2.3. FEFO and FIFO; 2.4. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food technology; 3.2. Food chemistry; 3.3. Food nutrition; 3.4. Food biotechnology; 3.5. Food enzymology; 3.6. Food packaging and labelling; 3.7. Food analysis and instrumentation; 3.8. Document management. 4.0. Essential skills 4.1. Computer skills;	

	4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Current food processing technology is evaluated as per food manufacturing standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MODIFY EXISTING FOOD PRODUCT	DUTY NO.	802
TASK TITLE	EVALUATE CURRENT SENSORY FEATURES OF THE PRODUCT	TASK NO.	8022
PERFORMANCE CRITERIA	The person performing this task must be able to evaluate sensory features of food product as per approved food manufacturing and processing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
1. The person performing this task must be able to perform the following; 2. Select right tools, equipment and safety gear for the task; 3. Observe health and safety when performing the task; 4. Identify panellists to perform sensory test; 5. Conduct sensory evaluation of current food product; 6. Obtain sensory gaps of current food product; 7. Identify sensory changes to be affected; 8. Document sensory evaluation of current food product; 9. Clean work area, tools and equipment; 10. Store tools and equipment; 11. Dispose waste.		Detailed knowledge about: 1.0. Methods: The person performing this task must be able to explain how to: 1.1. Identify all panellist to conduct sensory test; 1.2. Conduct sensory evaluation; 1.3. Identify sensory need changes; 1.4. Document and present sensory evaluation report. 2.0. Principles The person must be able to explain the principles of: 2.1. Sensory evaluation; 2.2. FEFO and FIFO; 2.3. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Sensory evaluation procedures; 3.2. Food production; 3.3. Document management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.	

DESCRIPTION OF THE END PRODUCTS / SERVICE	Sensory features of food product are evaluated as per food manufacturing standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MODIFYING EXISTING FOOD PRODUCT	DUTY NO.	802
TASK TITLE	EVALUATE CURRENT PRODUCT STABILITY	TASK NO.	8023
PERFORMANCE CRITERIA	The person performing this task must be able to evaluate food product stability as per food manufacturing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following; 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Identify mode of food product deterioration; 4. Identify key attributes to monitor in food product; 5. Select test method; 6. Set storage conditions; 7. Set target end point and testing frequency; 8. Determine changes in food product stability; 9. Evaluate food product stability; 10. Prepare food product stability report; 11. Submit food product stability report; 12. Clean work area, tools and equipment; 13. Store tools and equipment; 14. Dispose waste.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify mode of deterioration of food product; 1.2. Establish changes in food product stability; 1.3. Document and present food stability report. 2.0. Principles The person must be able to explain the principles of: 2.1. Food product stability; 2.2. FEFO and FIFO; 2.3. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food chemistry; 3.2. Food technology; 3.3. Food nutrition; 3.4. Food biotechnology; 3.5. Food enzymology; 3.6. Food packaging and labelling; 3.7. Document management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning;	

	4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Food product stability is evaluated as per food manufacturing standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MODIFY EXISTING FOOD PRODUCT	DUTY NO.	802
TASK TITLE	EVALUATE CURRENT FOOD QUALITY TESTING PARAMETERS	TASK NO.	8024
PERFORMANCE CRITERIA	The person performing this task must be able to evaluate food quality testing parameters as per food manufacturing standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Establish current food quality testing parameters; 4. Analyse the current food quality testing parameters;		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1. 1 Identify food quality testing parameters; 1. 2 Analyse the current food quality testing parameters changes; 1. 3 Establish the food quality testing parameters changes; 1. 4 Document and present food quality testing	

5. Verify the analysed food quality parameters Determine the food quality testing parameters changes; 6. Document the food quality testing parameter changes; 7. Clean work area, tools and equipment; 8. Store tools and equipment; 9. Dispose waste.	parameters changes. 2.0. Principles The person must be able to explain the principles of: 2.1. FEFO and FIFO; 2.2. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food chemistry; 3.2. Food analysis; 3.3. Food biotechnology; 3.4. Instrumentation; 3.5. Document management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Food quality testing parameters are evaluated as per food manufacturing procedures.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MODIFY EXISTING FOOD PRODUCTS	DUTY NO.	802
TASK TITLE	DETERMINE FUNCTIONAL CHANGES IN FOOD PRODUCT	TASK NO.	8025

PERFORMANCE CRITERIA	The person performing this task must be able to determine functional changes in food as per food manufacturing standards.
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
1. The person performing this task must be able to perform the following: 2. Select right tools, equipment and safety gear for the task; 3. Observe health and safety when performing the task; 4. Identify necessary food product ingredient changes; 5. Identify necessary food additives changes; 6. Identify necessary auxiliary materials changes; 7. Analyse food composition changes; 8. Perform food product quality test; 9. Document and present food composition changes; 10. Clean work area.	Detailed knowledge about: 1.0 Methods 1.1. The person performing this task must be able to explain how to: 1.2. Identify food composition changes; 1.3. Analyse food composition changes; 1.4. Document and present food composition changes. 2. 0 Principles 2. 1 The person must be able to explain the principles of: 2. 2 FEFO and FIFO; 2. 3 Good manufacturing practices (GMP). 3. 0 Theories 3. 1 The person must be able to explain: 3. 2 Food composition; 3. 3 Food analysis; 3. 4 Chemistry; 3. 5 Document management. 4. 0 Essential skills 4. 1 Computer skills; 4. 2 Communication skills; 4. 3 Problem solving skills; 4. 4 Integrity; 4. 5 Time management; 4. 6 Quick learning; 4. 7 Flexibility; 4. 8 Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Functional changes in food products are determined as per food manufacturing standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATIO N CODE	800
DUTY TITLE	MODIFY EXISTING FOOD PRODUCT	DUTY NO.	802
TASK TITLE	EVALUATE PACKAGING STABILITY OF FOOD PRODUCT	TASK NO.	8026
PERFORMANCE CRITERIA	The person performing this task must be able to evaluate packaging stability of food product as per food package standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following: 1. Select right tools, equipment and safety gear for the task; 2. Determine mode of food package stability test; 3. Establish food package stability gap (mode of deformation); 4. Analyse package stability gap; 5. Communicate package stability gap to manufacture for improvement; 6. Keep records on stability of the food package; 7. Clean work area, tools and equipment; 8. Store tools and equipment; 9. Dispose waste.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Determine mode of food package stability test; 1.2. Identify package stability gap; 1.3. Analyse package stability gap; 1.4. Improve package stability ; 1.5. Document package stability test records. 2.0. Principles The person must be able to explain the principles of: 2.1. FEFO and FIFO; 2.2. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food technology; 3.2. Food nutrition; 3.3. Food biotechnology; 3.4. Food enzymology; 3.5. Food packaging and labelling. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility;	

	4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Food product packaging stability is evaluated as per food package standards
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MODIFY EXISTING FOOD PRODUCT	DUTY NO.	802
TASK TITLE	ESTABLISH PACKAGING DESIGN CHANGES	TASK NO.	8027
PERFORMANCE CRITERIA	The person performing this task must be able to establish food product packaging design as per approved food manufacturing and packaging standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
1. The person performing this task must be able to perform the following 2. Select right tools, equipment and safety gear for the task; 3. Observe health and safety when performing the task; 4. Identify package appearance changes; 5. Identify package material type changes; 6. Identify package size changes; 7. Analyse the packaging changes; 8. Document food product packaging changes; 9. Clean work area, tools and equipment; 10. Store tools and equipment Dispose waste		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify food packaging design changes; 1.2. Analyse food packaging changes; 1.3. Document food packaging changes. 2.0. Principles The person must be able to explain the principles of: 2.1. FEFO and FIFO; 2.2. Good manufacturing practices (GMP). 3.0. Theories The person must be able to explain: 3.1. Food production; 3.2. Food packaging and packaging materials; 3.3. Document management; 3.4. Food laws, regulations and relevant standards. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.	

DESCRIPTION OF THE END PRODUCTS / SERVICE	Food product packaging design changes are established as per food package standard.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	
DUTY TITLE	ESTABLISH LAYOUT OF FOOD PREMISE	DUTY NO.	803
TASK TITLE	DETERMINE SPECIFICATIONS FOR INTERNAL DESIGN LAYOUT AND TRAFFIC ALIGNMENT	TASK NO.	8031
PERFORMANCE CRITERIA	The person performing this task must be able to determine specifications for internal design layout and traffic alignment as per approved standards governing food manufacturing and premise layout.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select right tools, equipment and safety gear for the task; 2. Establish the requirements and specifications needed for internal design layout and traffic alignment ; 3. Determine specifications for production process flow; 4. Determine specifications for openings for transfer of materials and products; 5. Verify drawings adherence to Good Manufacturing Practices (GMP); 6. Document the recorded specifications.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify the requirements and specifications of internal design layout and traffic alignments in food premise; 1.2. Provide specifications of internal design layout and traffic alignment in food premise; 1.3. Document the internal design and traffic alignment requirements and specifications. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories The person must be able to explain: 3.1. Plant layout; 3.2. Quality management; 3.3. Food safety management; 3.4. Health and safety management; 3.5. Environmental management; 3.6. Document management. 4.0. Essential skills	

	4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Specifications for internal design layout and traffic alignment are determined as per standards governing food manufacturing and premise layout.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	ESTABLISH LAYOUT OF FOOD PREMISE	DUTY NO.	803
TASK TITLE	DETERMINE SPECIFICATIONS FOR CONSTRUCTION OF INTERNAL STRUCTURES AND FITTINGS	TASK NO.	8032
PERFORMANCE CRITERIA	The person performing this task must be able to determine specifications for internal structures and fittings as per approved standards governing food premise layout manufacturing.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE) .		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select tools, equipment and safety gear; 2. Establish the requirements and specifications needed for construction of internal structures and fittings in food premise; 3. Determine specifications for walls and windows; 4. Determine specifications needed for windows; 5. Determine specifications for ceilings and overhead fixtures; 6. Determine specifications for trenches; 7. Document specifications for construction of internal structures and fittings.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify the requirements and specifications of construction of internal structures and fittings in food premise; 1.2. Provide specifications of constructions of internal structures and fittings in food premise; 1.3. Document the construction of internal structures and fittings specifications. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories The person must be able to explain: 3.1. plant layout; 3.2. Quality management ; 3.3. Food safety management; 3.4. Health and safety management; 3.5. Environmental management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills;	

	4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Specifications for construction of internal structures and fittings are determined as per approved governing food premises layout standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	ESTABLISH LAYOUT OF FOOD PREMISE	DUTY NO.	803
TASK TITLE	DETERMINE LAYOUT SPECIFICATIONS FOR EQUIPMENT TO BE INSTALLED AND TEMPORARY MOBILE STRUCTURES	TASK NO.	8033
PERFORMANCE CRITERIA	The person performing this task must be able to determine layout specifications for equipment to be installed and temporary mobile structure as per approved standards governing food premise layout and manufacturing.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE) .		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select right tools, equipment and safety gear for the task; 2. Identify the equipment to be installed and temporary mobile structures to be used in the food facility; 3. Establish the specifications for equipment and temporary mobile structures to be installed; 4. Provide specifications for equipment installation and temporary mobile structures; 5. Verify the compliance of drawings to Good Manufacturing practices requirements; 6. Document the specifications of equipment installation and temporary mobile structures.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify the requirements and specifications for equipment installation and mobile temporary mobile structures in food premise; 1.2. Provide specifications of for equipment installation and temporary mobile structures in food premise; 1.3. Document the specifications of equipment installation and temporary mobile structures in food premise construction of internal structures and fittings specifications. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories The person must be able to explain: 3.1. Plant layout; 3.2. Quality management; 3.3. Food safety management;	

	3.4. Health and safety management; 3.5. Environmental management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Lay out specifications for installation of equipment and temporary mobile structure is determined as per food layout standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	ESTABLISH LAYOUT OF FOOD PREMISE	DUTY NO.	803
TASK TITLE	DETERMINE SPECIFICATIONS FOR CONSTRUCTION OF STORAGE AREA	TASK NO	8034
PERFORMANCE CRITERIA	The person performing this task must be able to determine specifications of storage area constructions as per approved standards governing food manufacturing and food premise layout.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Establish the specifications for equipment installation and temporary mobile structures; 4. Determine specifications for food		Detailed knowledge about: 1.0. Methods This person performing this task must be able to explain how to: 1.1. Identify the requirements and specifications for storage area in food premise layout; 1.2. Provide specifications for storage area installation and temporary mobile structures in food premise; 1.3. Document the specifications of storage area in food premise layout.	

raw materials and auxiliary materials storage facilities; 5. Determine specifications for storage facilities of finished food products; 6. Document the specifications for construction of storage areas in food premise.	2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories: The person must be able to explain: 3.1. plant layout; 3.2. Quality management; 3.3. Food safety management; 3.4. Health and safety management; 3.5. Environmental management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Specifications for construction of storage area are determined as per food layout standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MONITOR MANAGEMENT SYSTEM	DUTY NO.	804
TASK TITLE	ESTABLISH MANAGEMENT SYSTEM AS PER INTERNATIONAL STANDARDS	TASK NO	8041

PERFORMANCE CRITERIA	The person performing this task must be able to establish management system as per approved food manufacturing and international standards.
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
The person performing this task must be able to perform the following 1. Select right tools, equipment and safety gear for the task; 2. Create management system awareness; 3. Solicit commitment from top management on need for management system; 4. Prepare management system implementation plan; 5. Communicate the implementation plan to top management; 6. Review the management system implementation plan; 7. Document management system implementation records; 8. Clean work area.	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1. 1 Create management system awareness; 1. 2 Prepare and present management system implementation plan; 1. 3 Review the management system implementation plan; 1. 4 Document management system implementation records. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories The person must be able to explain: 3.1. Quality management; 3.2. Food safety management; 3.3. Health and safety management; 3.4. Environmental management; 3.5. Document management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.

DESCRIPTION OF THE END PRODUCTS / SERVICE	Management system is established as per ISO standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MONITOR MANAGEMENT SYSTEM	DUTY NO.	804
TASK TITLE	COORDINATE MANAGEMENT SYSTEM AUDITS	TASK NO.	8042
PERFORMANCE CRITERIA	The person performing this task must be able to coordinate management system audits as per approved food manufacturing and international standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Prepare management system audit schedule for internal and external audits; 4. Establish internal and external audit teams; 5. Organize training to internal and external auditors; 6. Organize internal and external auditing; 7. Supervise internal and external auditing; 8. Prepare auditing report;		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Prepare management system schedule for internal and external; 1.2. Organize and supervise internal and external management system audits; 1.3. Prepare and present management system audits reports. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system.	

9. Communicate auditing report to concerned parties; 10. Clean work area.	3.0. Theories The person must be able to explain: 3.1. Quality management; 3.2. Food safety management; 3.3. Health and safety management; 3.4. Environmental management; 3.5. Document management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Management system audits are coordinated as per ISO standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	MONITOR MANAGEMENT SYSTEM	DUTY NO.	804
TASK TITLE	COORDINATE MANAGEMENT REVIEW MEETINGS	TASK NO	8043
PERFORMANCE CRITERIA	The person performing this task must be able to coordinate management review meetings as per approved food manufacturing and international standards.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select right tools, equipment and safety gear for the task; 2. Identify members to attend management review meetings.; 3. Prepare management review meeting schedule.; 4. Prepare management review meeting agenda ; 5. Communicate management review meeting schedule with agenda; 6. Organize management review meeting; 7. Supervise management review meeting ; 8. Organize and supervise management review meeting; 9. Prepare management review meetings minutes; 10. Communicate management review meetings minutes; 11. Clean work area.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify members to attend management review meeting; 1.2. Organize and supervise management review meeting; 1.3. Document and communicate management review minutes. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories The person must be able to explain: 3.1. Quality management; 3.2. Food safety management; 3.3. Health and safety management; 3.4. Environmental management; 3.5. Document management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills;	

	4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Management review meeting are coordinated as per ISO standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	OVERSEE FOOD MANUFACTURING PROCESS	DUTY NO.	805
TASK TITLE	ESTABLISH PRODUCTION PLAN OF FOOD PRODUCTS	TASK NO.	8051
PERFORMANCE CRITERIA	The person performing this task must be able to establish production plan of food products as per approved standards governing food manufacturing and production procedures .		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select tools, equipment and safety gear; 2. Identify food products to be produced; 3. Identify the raw materials and ingredients to be used; 4. Prepare production plan; 5. Organize materials required for running production process; 6. Organize production processing equipment; 7. Document the production plan.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Identify the materials and ingredients needed for food production; 1.2. Identify the equipment to be used in food production; 1.3. Establish production plan; 1.4. Document the production plan established. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories The person must be able to explain: 3.1. Engineering in food manufacturing; 3.2. Quality management ; 3.3. Food safety management; 3.4. Health and safety management; 3.5. Environmental management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills;	

	4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS /SERVICE	Food product production plan is established as per food production procedures.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	OVERSEE FOOD MANUFACTURING PROCESS	DUTY NO.	805
TASK TITLE	MONITOR FOOD PRODUCTION ACTIVITIES	TASK NO.	8052
PERFORMANCE CRITERIA	The person performing this task must be able to monitor food production activities as per standards governing food manufacturing and production procedures.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select tools, equipment and safety gear; 2. Obtain food product production plan Verify the raw materials and ingredients to be used; 3. Verify the production performance; 4. Verify product quality during production; 5. Verify production yield; 6. Document the production monitoring records; 7. Clean work area.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1. Verify the materials and ingredients needed for food production; 1.2. Verify the equipment to be used in food production; 1.3. Monitor the establish production plan during food processing; 1.4. Document the production monitoring records. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Health and safety management system; 2.4. Environmental management system. 3.0. Theories The person must be able to explain: 3.1. Engineering in food process manufacturing; 3.2. Quality management ; 3.3. Food safety management; 3.4. Health and safety management; 3.5. Environmental management. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills;	

	4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Food production activities are monitored as per standards governing food manufacturing and production.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	PARTICIPATE IN PREPARATION OF FOOD STANDARDS	DUTY NO.	806
TASK TITLE	DETERMINE CHARACTERISTICS OF SELECTED FOOD PRODUCTS	TASK NO.	8061
PERFORMANCE CRITERIA	The person performing this task must be able to determine characteristics of selected food products to food manufacturing standards as per governed procedures.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

The person performing this task must be able to perform the following. 1. Select right tools, equipment and safety gear for the task; 2. Observe health and safety when performing the task; 3. Identify various types of packed and pre-packed food products; 4. Provide food product composition information; 5. Provide national information of food products; 6. Determine product packaging material quality specifications information; 7. Provide requirements of product labelling information; 8. Determine characteristics of selected food products; 9. Document the determined characteristics of food products.	Detailed knowledge about: 1.0. Methods This person performing this task must be able to explain how to: 1.1 Identify types of prepacked and packed foods; 1.2 determine food composition and nutrition standards of packed and prepacked food products information ; 1.3 Determine package and labelling required information ; 1.4 Document the food products determined specifications information. 2.0. Principles The person must be able to explain the principles of: 2.1. Quality management system; 2.2. Food safety management system; 2.3. Packaging and labelling of food products. 3.0. Theories The person must be able to explain: 3.1. Food technology; 3.2. Food nutrition; 3.3. Food biotechnology; 3.4. Food enzymology ; 3.5. Food packaging and labelling ; 3.6. Change of food properties during preservation; 3.7. Relationships between chemical, biological and physical factors in food and food quality. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity; 4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS / SERVICE	Food products characteristics are determined as per ISO standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

OCCUPATION	FOOD TECHNOLOGIST	OCCUPATION CODE	800
DUTY TITLE	PARTICIPATE IN PREPARATION OF FOOD STANDARDS	DUTY NO.	806
TASK TITLE	ESTABLISH FOOD PRODUCT SPECIFICATIONS	TASK NO	8062
PERFORMANCE CRITERIA	The person performing this task must be able to establish food product specifications as per standards governed food manufacturing and processing.		
RANGE STATEMENT	The task will be performed in food premises. The food technologist shall work independently. The following equipment, tools and materials will be needed in performing the task: standard operating procedures, manuals, computer, personal protective equipment (PPE).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to perform the following. 1. Select tools, equipment and safety gear; 2. Determine nutritional level of food product; 3. Determine food product shelf life; 4. Establish storage condition of food products; 5. Identify food product parameters to be monitored; 6. Establish test methods for selected parameters; 7. Establish food product standards and specifications; 8. Document food product standards and specifications.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1. 1 Identify types of pre-packed and packed foods ; 1. 2 Determine food composition and nutrition standard levels of food products ; 1. 3 Determine package and labelling specifications required in food products ; 1. 4 Document the food products determined standard and specifications . 2.0. Principles The person must be able to explain the principles of: 2.1. Packaging and labelling of food products; 2.2. Quality management system; 2.3. Food safety management system. 3.0. Theories The person must be able to explain: 3.1. Food technology; 3.2. Food nutrition; 3.3. Food biotechnology; 3.4. Food enzymology; 3.5. Food packaging and labelling. 4.0. Essential skills 4.1. Computer skills; 4.2. Communication skills; 4.3. Problem solving skills; 4.4. Integrity;	

	4.5. Time management; 4.6. Quick learning; 4.7. Flexibility; 4.8. Critical thinking.
DESCRIPTION OF THE END PRODUCTS /SERVICE	Food products specifications are established as per ISO standards.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: Occupational safety and health.

TABLE 1: DACUM CHART FOR FOOD SCIENCE AND TECHNOLOGIST – LEVEL 8

DUTIES	TASK	ENABLERS
1.0. Develop new food product	1.1. Generate concept of a new food product. 1.2. Establish formula formula for new food product. 1.3. Conduct pilot plant testing. 1.4. Manage product quality testing. 1.5. Establish product specifications.	Generic skills and knowledge • Communication skills • Computer application skills • Equipment operation skills • Use of manufactures manuals and recommendations Tools and equipment • Personal protective equipment (PPEs) such as safety shoes, glasses, gloves, hearing protections, hard hat. • Recording files and pen Materials • Food ingredients, food additives, auxiliary materials • Local food standards from Local Authority Worker behaviours • Team work • Communication skills • Trustworthiness • Time management and commitments

DUTIES	TASK	ENABLERS
2.0. Modify existing Food product	2.1. Evaluate current food processing method. 2.2. Evaluate current sensory features of food. 2.3. Evaluate current product stability. 2.4. Evaluate current food quality test parameter. 2.5. Determine functional changes in food product. 2.6. Evaluate packaging stability of food product. 2.7. Establish packaging design changes.	Generic and knowledge skills • Communication skills • Computer application skills • Equipment operation skills • Use of manufactures manuals and recommendations Tools and equipment • Personal protective equipment (PPEs) such as safety shoes, glasses, gloves, hearing protections, hard hat. • Recording files and pen Materials • Food ingredients, food additives, auxiliary materials • Local food standards from Local Authority

DUTIES	TASK	ENABLERS
3.0. Establish layout of food premise	3.1. Determine specifications for internal design layout and traffic alignment. 3.2. Determine specifications for Construction of internal structures and fittings. 3.3. Determine layout specifications for equipment to be installed and temporary mobile structures. 3.4. Determine specifications for Construction of storage area.	Generic skills and knowledge • Communication skills • Computer application skills • Use of manufactures manuals and recommendations Tools and equipment • Personal protective equipment (PPEs) such as safety shoes, glasses, gloves, hearing protections, hard hat. • Recording files and pen Materials • Standard operating procedures • Local food standards from Local Authority • International operating standards (ISO) Worker behaviours • Team work • Communication skills • Trustworthiness • Time management and commitments

DUTIES	TASK	ENABLERS
4.0. Monitor management system	4.1. Establish a management system as per international standards. 4.2. Coordinate management system audits. 4.3. Coordinate management review meetings.	Generic skills and knowledge • Communication skills • Computer application skills • Use of manufactures manuals and recommendations Tools and equipment • Personal protective equipment (PPEs) such as safety shoes, glasses, gloves, hearing protections, hard hat. • Recording files and pen Materials • Standard operating procedures • Local food standards from local authority • International operating standards (ISO) Worker behaviours • Teamwork spirit • Communication skills • Trustworthiness • Time management and commitments

DUTIES	TASK	ENABLERS
5.0. Oversee food manufacturing process	5.1. Establish production plan of food products. 5.2. Monitor food production activities.	Generic skills and knowledge • Communication skills • Computer application skills • Equipment operation skills • Use of manufactures manuals and recommendations Tools and equipment • Personal protective equipment (PPEs) such as safety shoes, glasses, gloves, hearing protections, hard hat. • Recording files and pen Materials • Standard operating procedures • Local food standards from Local Authority • Codex Alimentarius standards • ISO standards
6.0. Participate in Preparation of Food standards	6.1. Determine characteristics of selected food products. 6.2. Establish food product specifications.	Generic skills and knowledge • Communication skills • Computer application skills Tools and equipment • Recording files and pen Materials • Codex Alimentarius • Standards • International operating Standards (ISO) • Local Authority food standards Worker behaviours • Team work • Communication skills • Trustworthiness • Time management and commitments

