



Technical Lead - Food Analysis

QP Code: FIC/Q7605

Version: 1.0

NSQF Level: 5

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FIC/Q7605: Technical Lead - Food Analysis

Brief Job Description

The individual is responsible for managing food samples analytical work, interpretation of results and maintenance of records. The individual is also responsible for managing laboratory safety and housekeeping practices, recommending new processes, analysing problems and conducting audits for maintaining the quality standards in the food manufacturing facility.

Personal Attributes

The individual must be able to pay attention to details, perform basic mathematical calculations and manage time to meet the deadlines for test results. The individual must also be able to communicate effectively and comfortably while working in a team.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [FIC/N7617: Coordinate and conduct analytical work for food quality control and assurance](#)
2. [FIC/N7618: Maintain quality processes and standards in manufacturing food products](#)
3. [FIC/N7619: Regulate laboratory operations](#)
4. [FIC/N7620: Manage quality assurance and quality control framework](#)
5. [FIC/N9904: Ensure food safety at the workplace](#)
6. [FIC/N9903: Ensure workplace health and safety](#)
7. [FIC/N9902: Work effectively in an organisation](#)
8. [SGJ/N1702: Optimize resource utilization at workplace](#)

Qualification Pack (QP) Parameters

Sector	Food Processing
Sub-Sector	Generic
Occupation	Quality Analysis/ Assurance
Country	India

NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification & Experience	B.Sc (Science Stream) OR 12th Class (Science stream) with 1 Year of experience Relevant experience OR 12th Class (in science stream with 3 years of diploma in relevant stream) OR Certificate-NSQF (Level 4 Qualification Certificate in same occupation of food processing) with 1 Year of experience Relevant experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	20 Years
Last Reviewed On	NA
Next Review Date	NA
NSQC Approval Date	
Version	1.0

FIC/N7617: Coordinate and conduct analytical work for food quality control and assurance

Description

This NOS unit is about conducting analysis of food samples, interpreting data and preparing reports to meet the test results requirement.

Scope

The scope covers the following :

- Manage routine activities for the analytical process
- Conduct food samples analysis
- Generate analysis reports and maintain records

Elements and Performance Criteria

Manage routine activities for the analytical process

To be competent, the user/individual on the job must be able to:

- PC1.** ensure that all the chemicals, glassware, consumables, equipment spares etc. required for analysis are in stock, labeled and organized in the lab
- PC2.** check that all the equipment and tools are available in the laboratory and functioning properly
- PC3.** prepare work plan and testing schedules for analysing the food samples as per the targeted plans
- PC4.** ensure that food samples for analysis are received, sorted and stored in the laboratory as per the organizational procedures
- PC5.** assign food samples within the team and give them instructions about the correct analytical procedure need to follow for analysis
- PC6.** conduct or organise training sessions for the team to update them about advanced analytical techniques and standards, amendments in standards and regulations of food products

Conduct food samples analysis

To be competent, the user/individual on the job must be able to:

- PC7.** perform routine and non-standard tests of materials and products
- PC8.** analyse appropriate certified reference material from time to time to check the accuracy of the results of tests
- PC9.** analyse the food samples for essential minerals (Ca, Fe, K, Mg, Zn etc.) and heavy metals using AAS, ICP-MS methods
- PC10.** analyse the food samples for amino acid profile, fatty acid profile, food additives, mycotoxins, drug residues, adulterants and pesticides using HPLC, GC-MS methods
- PC11.** conduct follow-up tests for samples which require attention

Generate analysis reports and maintain records

To be competent, the user/individual on the job must be able to:

- PC12.** approve and verify the requisition of all the chemicals, glass wares, consumables, equipment spares required for analysis

- PC13.** verify and maintain records of samples received, analysed and results observed in the laboratory
- PC14.** prepare and maintain all the documents and reports related to sample analysis, test results etc. as per the organisational procedures

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, processes and procedures followed in the organisation
- KU2.** internal processes like procurement, store management, inventory management, quality management and key contact points for query resolution
- KU3.** type of chemicals, materials and equipment required for maintaining hygiene in laboratory
- KU4.** calibration procedure of all the equipment
- KU5.** various chemicals required for testing, their handling, storage and safe disposal
- KU6.** how to prepare work plan and schedules for food samples analysis process
- KU7.** how to assign analysis work in a team
- KU8.** how to assess team for training requirements
- KU9.** sample preparation and testing methods required for analysis of different food samples
- KU10.** how to operate all the analytical equipment and tools used for testing
- KU11.** process of conducting food samples analysis and interpret test results
- KU12.** various food samples analysis and testing methods
- KU13.** various advanced analytical techniques and standards, amendments in standards and regulations of food products
- KU14.** methods of disposing waste
- KU15.** reporting procedure of an organisation
- KU16.** data interpretation for preparation of results and reports
- KU17.** documentation and records need to maintain regarding food samples analysis process
- KU18.** food safety and hygiene standards and regulations (as per FSSAI)

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read manuals, SOPs, health and safety instructions, memos, reports, job cards etc.
- GS2.** read and interpret images, graphs, diagrams for typical product specifications, job sheets, procedures, material labels and safety information as provided
- GS3.** prepare reports related to inspection process in English/regional language
- GS4.** communicate the requirements to the supervisor and co-workers
- GS5.** analyse and apply the information gathered from observation, experience, reasoning, or communication to act efficiently
- GS6.** complete the assigned tasks as per schedule
- GS7.** plan and organise work according to the work requirements
- GS8.** explore new approach of doing things to resolve issues

- GS9.** pay attention to equipment/apparatus operations detail
- GS10.** suggest improvements (if any) in current ways of working

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manage routine activities for the analytical process</i>	12	20	-	7
PC1. ensure that all the chemicals, glassware, consumables, equipment spares etc. required for analysis are in stock, labeled and organized in the lab	-	-	-	-
PC2. check that all the equipment and tools are available in the laboratory and functioning properly	-	-	-	-
PC3. prepare work plan and testing schedules for analysing the food samples as per the targeted plans	-	-	-	-
PC4. ensure that food samples for analysis are received, sorted and stored in the laboratory as per the organizational procedures	-	-	-	-
PC5. assign food samples within the team and give them instructions about the correct analytical procedure need to follow for analysis	-	-	-	-
PC6. conduct or organise training sessions for the team to update them about advanced analytical techniques and standards, amendments in standards and regulations of food products	-	-	-	-
<i>Conduct food samples analysis</i>	13	24	-	10
PC7. perform routine and non-standard tests of materials and products	-	-	-	-
PC8. analyse appropriate certified reference material from time to time to check the accuracy of the results of tests	-	-	-	-
PC9. analyse the food samples for essential minerals (Ca, Fe, K, Mg, Zn etc.) and heavy metals using AAS, ICP-MS methods	-	-	-	-
PC10. analyse the food samples for amino acid profile, fatty acid profile, food additives, mycotoxins, drug residues, adulterants and pesticides using HPLC, GC-MS methods	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. conduct follow-up tests for samples which require attention	-	-	-	-
<i>Generate analysis reports and maintain records</i>	5	6	-	3
PC12. approve and verify the requisition of all the chemicals, glass wares, consumables, equipment spares required for analysis	-	-	-	-
PC13. verify and maintain records of samples received, analysed and results observed in the laboratory	-	-	-	-
PC14. prepare and maintain all the documents and reports related to sample analysis, test results etc. as per the organisational procedures	-	-	-	-
NOS Total	30	50	-	20

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N7617
NOS Name	Coordinate and conduct analytical work for food quality control and assurance
Sector	Food Processing
Sub-Sector	Generic
Occupation	Quality Analysis/ Assurance
NSQF Level	5
Credits	TBD
Version	1.0
Next Review Date	NA

FIC/N7618: Maintain quality processes and standards in manufacturing food products

Description

This NOS unit is about maintaining the quality process and standards of food products and associated material required for food manufacturing as per the specifications.

Scope

The scope covers the following :

- Identify and analyse critical quality control points of manufacturing process
- Analyse quality test results and prepare documentation

Elements and Performance Criteria

Identify and analyse critical quality control points of manufacturing process

To be competent, the user/individual on the job must be able to:

- PC1.** review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications
- PC2.** identify and monitor the critical control points of food manufacturing process for quality control (QC) of product
- PC3.** review in-process records and perform the root cause analyses of critical control points for identifying the future errors in food manufacturing process
- PC4.** implement the corrective actions immediately for preventing the errors in food manufacturing process
- PC5.** ensure that finished processed food meets the required product standards and organisation regulations

Analyse quality test results and prepare documentation

To be competent, the user/individual on the job must be able to:

- PC6.** analyse the food samples quality testing results and deviation from standards
- PC7.** monitor and analyse the frequency and severity of product quality lapses to identify root cause of errors
- PC8.** validate the daily procedures, corrective action taken, test results and QC records
- PC9.** provide appropriate recommendations for maintaining quality standards and processes on the basis of test results
- PC10.** prepare final test reports and submit it to the regulatory authority
- PC11.** maintain records and documents related to corrective action, QC records, test results and test reports by following organizational procedures

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, processes and procedures followed in the organisation

- KU2.** type of products manufactured by the organisation
- KU3.** internal processes like procurement, store management, inventory management, quality management and key contact points for query resolution
- KU4.** food safety and hygiene standards followed
- KU5.** sample preparation and testing methods required for analysis of different food samples
- KU6.** the operation all the analytical equipment and tools used for testing
- KU7.** safety hazards and practices associated with the work
- KU8.** how to interpret data for preparation of results and reports
- KU9.** food safety standards and regulations (as per FSSAI)
- KU10.** process, handling and storage requirements of food products
- KU11.** food laws and regulations on product, packaging and labelling
- KU12.** hazard analysis and critical control point (HACCP)
- KU13.** various quality critical control points of food manufacturing process
- KU14.** how to review and analyse food ingredients, products and food manufacturing process for errors and improvements
- KU15.** corrective actions for common errors in food manufacturing process
- KU16.** documentation and records need to maintain regarding analysis work performed

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read manuals, SOPs, health and safety instructions, memos, reports, job cards etc.
- GS2.** read and interpret images, graphs, diagrams for typical product specifications, job sheets, procedures, material labels and safety information as provided
- GS3.** prepare reports related to inspection process in English/regional language
- GS4.** communicate the requirements to the supervisor and co-workers
- GS5.** analyse and apply the information gathered from observation, experience, reasoning, or communication to act efficiently
- GS6.** complete the assigned tasks as per schedule
- GS7.** plan and organise work according to the work requirements
- GS8.** explore new approach of doing things to resolve issues
- GS9.** pay attention to equipment/apparatus operations detail
- GS10.** suggest improvements (if any) in current ways of working

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify and analyse critical quality control points of manufacturing process</i>	16	29	-	11
PC1. review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications	-	-	-	-
PC2. identify and monitor the critical control points of food manufacturing process for quality control (QC) of product	-	-	-	-
PC3. review in-process records and perform the root cause analyses of critical control points for identifying the future errors in food manufacturing process	-	-	-	-
PC4. implement the corrective actions immediately for preventing the errors in food manufacturing process	-	-	-	-
PC5. ensure that finished processed food meets the required product standards and organisation regulations	-	-	-	-
<i>Analyse quality test results and prepare documentation</i>	14	21	-	9
PC6. analyse the food samples quality testing results and deviation from standards	-	-	-	-
PC7. monitor and analyse the frequency and severity of product quality lapses to identify root cause of errors	-	-	-	-
PC8. validate the daily procedures, corrective action taken, test results and QC records	-	-	-	-
PC9. provide appropriate recommendations for maintaining quality standards and processes on the basis of test results	-	-	-	-
PC10. prepare final test reports and submit it to the regulatory authority	-	-	-	-
PC11. maintain records and documents related to corrective action, QC records, test results and test reports by following organizational procedures	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	50	-	20

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N7618
NOS Name	Maintain quality processes and standards in manufacturing food products
Sector	Food Processing
Sub-Sector	Generic
Occupation	Quality Analysis/ Assurance
NSQF Level	5
Credits	TBD
Version	1.0
Next Review Date	NA

FIC/N7619: Regulate laboratory operations

Description

This NOS unit is about regulating the laboratory operations so that all the lab processes run efficiently and produce accurate and reliable results as per the specifications and standards of the organization.

Scope

The scope covers the following :

- Monitor and improve laboratory processes
- Monitor safety, hygiene and sanitation practices followed in laboratory
- Verify data integrity and records
- Conduct data analyses

Elements and Performance Criteria

Monitor and improve laboratory processes

To be competent, the user/individual on the job must be able to:

- PC1.** identify need of infrastructure, equipment and utilities in the laboratory for efficient workflow
- PC2.** check that calibration and working condition of tools and equipment is well maintained
- PC3.** check that all the chemicals, hazardous material, glassware and other utilities are labelled and placed properly as per organisational procedures
- PC4.** detect and minimise errors in pre-analytical, analytical and post-analytical processes
- PC5.** implement organisation recommended operational model in laboratory
- PC6.** guide appropriate and organization recommended process of food sample collection, labelling, storing and keeping back up of sample etc. to staff
- PC7.** instruct staff that chemicals which have leak containers, broken lids, deteriorate labels, passed expiry date etc. cannot be considered as usable in any of the laboratory operations
- PC8.** verify the process compliance and reliability of results by internal or external assessment
- PC9.** take corrective actions against errors in process and non-compliance of standards

Monitor safety, hygiene and sanitation practices followed in laboratory

To be competent, the user/individual on the job must be able to:

- PC10.** ensure that food samples are free from contaminants, pesticides, heavy metals, toxins and microbiologically safe i.e. free from coliforms, pathogens and other harmful microbes
- PC11.** implement HACCP plan for maintaining safety and hygiene in the laboratory
- PC12.** ensure that staff is free from any contagious disease and following personal hygiene practices in the laboratory while working
- PC13.** monitor that lab area and equipment are cleaned and disinfected regularly as per the organisational standards
- PC14.** monitor that waste disposal, sanitation and pest control practices are followed as per the organisational procedures
- PC15.** inspect and verify the effectiveness of the implemented food safety systems at regular intervals

Verify data integrity and records

To be competent, the user/individual on the job must be able to:

- PC16.** review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications
- PC17.** identify and monitor the critical control points of food manufacturing process for quality control (QC) of product
- PC18.** review in-process records and perform the root cause analyses of critical control points for identifying the future errors in food manufacturing process

Conduct data analyses

To be competent, the user/individual on the job must be able to:

- PC19.** implement the corrective actions immediately for preventing the errors in food manufacturing process
- PC20.** ensure that finished processed food meets the required product standards and organisation regulations
- PC21.** review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, processes and procedures followed in the organisation
- KU2.** food safety and hygiene standards followed
- KU3.** various processes and operations performed in laboratory
- KU4.** how to check the condition and calibration of tools and equipment in laboratory
- KU5.** how to detect and minimise errors in pre-analytical, analytical and post-analytical processes
- KU6.** organisation recommended process of food sample collection, labeling, storing and keeping back up of sample etc.
- KU7.** use and safe handling of chemicals in laboratory
- KU8.** how to verify the process compliance and reliability of results
- KU9.** corrective actions against errors in process and non-compliance of standards
- KU10.** process of HACCP plan
- KU11.** various practices to maintain the hygiene of employees, condition of laboratory items
- KU12.** how to monitor and analyse laboratory processes and operations
- KU13.** the use of basic statistics and statistical tools
- KU14.** how to verify and analyse testing data
- KU15.** use of various statistical tools e.g. SPSS, SPS, RSM
- KU16.** various ways of preparing results of tests
- KU17.** applicable legislation relating to the workplace i.e. health and safety, workplace regulations, use of work equipment, handling/ storage/ disposal/ cautions of use of products, fire precautions, hygiene practice, disposal of waste, environmental protection etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read manuals, SOPs, health and safety instructions, memos, reports, job cards etc.
- GS2.** read and interpret images, graphs, diagrams for typical product specifications, job sheets, procedures, material labels and safety information as provided
- GS3.** prepare reports related to inspection process in English/regional language
- GS4.** communicate the requirements to the supervisor and co-workers
- GS5.** analyse and apply the information gathered from observation, experience, reasoning, or communication to act efficiently
- GS6.** complete the assigned tasks as per schedule
- GS7.** plan and organise work according to the work requirements
- GS8.** explore new approach of doing things to resolve issues
- GS9.** pay attention to equipment/apparatus operations detail
- GS10.** suggest improvements (if any) in current ways of working

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Monitor and improve laboratory processes</i>	15	21	-	11
PC1. identify need of infrastructure, equipment and utilities in the laboratory for efficient workflow	-	-	-	-
PC2. check that calibration and working condition of tools and equipment is well maintained	-	-	-	-
PC3. check that all the chemicals, hazardous material, glassware and other utilities are labelled and placed properly as per organisational procedures	-	-	-	-
PC4. detect and minimise errors in pre-analytical, analytical and post-analytical processes	-	-	-	-
PC5. implement organisation recommended operational model in laboratory	-	-	-	-
PC6. guide appropriate and organization recommended process of food sample collection, labelling, storing and keeping back up of sample etc. to staff	-	-	-	-
PC7. instruct staff that chemicals which have leak containers, broken lids, deteriorate labels, passed expiry date etc. cannot be considered as usable in any of the laboratory operations	-	-	-	-
PC8. verify the process compliance and reliability of results by internal or external assessment	-	-	-	-
PC9. take corrective actions against errors in process and non-compliance of standards	-	-	-	-
<i>Monitor safety, hygiene and sanitation practices followed in laboratory</i>	6	13	-	3
PC10. ensure that food samples are free from contaminants, pesticides, heavy metals, toxins and microbiologically safe i.e. free from coliforms, pathogens and other harmful microbes	-	-	-	-
PC11. implement HACCP plan for maintaining safety and hygiene in the laboratory	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. ensure that staff is free from any contagious disease and following personal hygiene practices in the laboratory while working	-	-	-	-
PC13. monitor that lab area and equipment are cleaned and disinfected regularly as per the organisational standards	-	-	-	-
PC14. monitor that waste disposal, sanitation and pest control practices are followed as per the organisational procedures	-	-	-	-
PC15. inspect and verify the effectiveness of the implemented food safety systems at regular intervals	-	-	-	-
<i>Verify data integrity and records</i>	4	6	-	2
PC16. review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications	-	-	-	-
PC17. identify and monitor the critical control points of food manufacturing process for quality control (QC) of product	-	-	-	-
PC18. review in-process records and perform the root cause analyses of critical control points for identifying the future errors in food manufacturing process	-	-	-	-
<i>Conduct data analyses</i>	5	10	-	4
PC19. implement the corrective actions immediately for preventing the errors in food manufacturing process	-	-	-	-
PC20. ensure that finished processed food meets the required product standards and organisation regulations	-	-	-	-
PC21. review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications	-	-	-	-
NOS Total	30	50	-	20

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N7619
NOS Name	Regulate laboratory operations
Sector	Food Processing
Sub-Sector	Generic
Occupation	Quality Analysis/ Assurance
NSQF Level	5
Credits	TBD
Version	1.0
Next Review Date	NA

FIC/N7620: Manage quality assurance and quality control framework

Description

This NOS unit is about managing the quality assurance and quality control framework by fulfilling the pre-requisites and performing the internal audits of food safety practices as per the specifications and standards of the organization.

Scope

The scope covers the following :

- Develop and implement quality management framework
- Conduct audit and prepare reports of food safety
- Investigate lapses in quality and hygiene standards

Elements and Performance Criteria

Develop and implement quality management framework

To be competent, the user/individual on the job must be able to:

- PC1.** identify the quality requirements and standards of the food samples
- PC2.** plan the work activities to be perform to meet the quality requirements and communicate the same to the team
- PC3.** monitor and review the work activities performed by the team members
- PC4.** develop and implement food safety related pre-requisite programs and quality operational excellence models for investigations
- PC5.** ensure that appropriate guidelines, approaches, requirements and procedures for managing quality are implemented as planned
- PC6.** implement validation processes in production lines and review their effectiveness for validating the products and packaging quality
- PC7.** ensure compliance with all standard operating procedures pertaining to analysis and quality assurance standards
- PC8.** identify and monitor any deviation in quality of product and take effective decision for its resolution

Conduct audit and prepare reports of food safety

To be competent, the user/individual on the job must be able to:

- PC9.** compile all the data collected and prepare quality metric reports related to of food safety practices followed
- PC10.** perform internal audits, root cause analysis on findings and implement corrective actions basis on the analysis to prevent the errors
- PC11.** prepare regular audit reports for the regulatory authorities by following organizational procedures
- PC12.** maintain the records of quality metric reports, internal audit reports etc. for future use

Investigate lapses in quality and hygiene standards

To be competent, the user/individual on the job must be able to:

- PC13.** implement the corrective actions immediately for preventing the errors in food manufacturing process
- PC14.** ensure that finished processed food meets the required product standards and organisation regulations
- PC15.** review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications
- PC16.** implement the corrective actions immediately for preventing the errors in food manufacturing process
- PC17.** ensure that finished processed food meets the required product standards and organisation regulations
- PC18.** review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications
- PC19.** implement the corrective actions immediately for preventing the errors in food manufacturing process
- PC20.** ensure that finished processed food meets the required product standards and organisation regulations
- PC21.** review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications
- PC22.** implement the corrective actions immediately for preventing the errors in food manufacturing process
- PC23.** ensure that finished processed food meets the required product standards and organisation regulations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, processes and procedures followed in the organisation
- KU2.** food safety and hygiene standards followed
- KU3.** process of developing quality management framework
- KU4.** organizational guidelines, approaches, requirements and procedures for managing quality
- KU5.** various food safety related pre-requisite programs and quality operational excellence models for investigations
- KU6.** process of HACCP plan
- KU7.** how to conduct audit of food safety practices followed in industry
- KU8.** how to investigate lapses in food quality
- KU9.** corrective actions to rectify the lapses in food safety
- KU10.** how to review the results of investigation
- KU11.** documents and records such as quality metric reports, internal audit reports etc. need to maintain related to investigation of unsafe food product incident

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read manuals, SOPs, health and safety instructions, memos, reports etc.
- GS2.** read and interpret images, graphs, diagrams for typical product specifications, job sheets, procedures, and safety information as provided
- GS3.** prepare reports related to quality check process in English/regional language
- GS4.** communicate the requirements to the supervisor and co-workers
- GS5.** analyse and apply the information gathered from observation, experience, reasoning, or communication to act efficiently
- GS6.** complete the assigned tasks as per schedule
- GS7.** plan and organise work according to the work requirements
- GS8.** explore new approach of doing things to resolve issues
- GS9.** pay attention to equipment/apparatus operations detail
- GS10.** suggest improvements (if any) in current ways of working

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Develop and implement quality management framework</i>	9	13	-	6
PC1. identify the quality requirements and standards of the food samples	-	-	-	-
PC2. plan the work activities to be perform to meet the quality requirements and communicate the same to the team	-	-	-	-
PC3. monitor and review the work activities performed by the team members	-	-	-	-
PC4. develop and implement food safety related pre-requisite programs and quality operational excellence models for investigations	-	-	-	-
PC5. ensure that appropriate guidelines, approaches, requirements and procedures for managing quality are implemented as planned	-	-	-	-
PC6. implement validation processes in production lines and review their effectiveness for validating the products and packaging quality	-	-	-	-
PC7. ensure compliance with all standard operating procedures pertaining to analysis and quality assurance standards	-	-	-	-
PC8. identify and monitor any deviation in quality of product and take effective decision for its resolution	-	-	-	-
<i>Conduct audit and prepare reports of food safety</i>	8	12	-	6
PC9. compile all the data collected and prepare quality metric reports related to of food safety practices followed	-	-	-	-
PC10. perform internal audits, root cause analysis on findings and implement corrective actions basis on the analysis to prevent the errors	-	-	-	-
PC11. prepare regular audit reports for the regulatory authorities by following organizational procedures	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. maintain the records of quality metric reports, internal audit reports etc. for future use	-	-	-	-
<i>Investigate lapses in quality and hygiene standards</i>	13	25	-	8
PC13. implement the corrective actions immediately for preventing the errors in food manufacturing process	-	-	-	-
PC14. ensure that finished processed food meets the required product standards and organisation regulations	-	-	-	-
PC15. review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications	-	-	-	-
PC16. implement the corrective actions immediately for preventing the errors in food manufacturing process	-	-	-	-
PC17. ensure that finished processed food meets the required product standards and organisation regulations	-	-	-	-
PC18. review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications	-	-	-	-
PC19. implement the corrective actions immediately for preventing the errors in food manufacturing process	-	-	-	-
PC20. ensure that finished processed food meets the required product standards and organisation regulations	-	-	-	-
PC21. review the quality of ingredients used for food manufacturing to ensure that they are as per the required specifications	-	-	-	-
PC22. implement the corrective actions immediately for preventing the errors in food manufacturing process	-	-	-	-
PC23. ensure that finished processed food meets the required product standards and organisation regulations	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	50	-	20

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N7620
NOS Name	Manage quality assurance and quality control framework
Sector	Food Processing
Sub-Sector	Generic
Occupation	Quality Analysis/ Assurance
NSQF Level	5
Credits	TBD
Version	1.0
Next Review Date	NA

FIC/N9904: Ensure food safety at the workplace

Description

This unit is about performing various tasks for ensuring food safety at the workplace.

Scope

The scope covers the following :

- Ensure food safety at the workplace

Elements and Performance Criteria

Ensure food safety at the workplace

To be competent, the user/individual on the job must be able to:

- PC1.** identify the biological, chemical, and physical hazards at various stages of food processing. Stages: procurement of raw material; production, manufacturing, distribution, delivery of finished product, etc.
- PC2.** implement food safety procedures and regulatory policies at the food processing workplace. Policies: Visitor's Policy, Health declaration policy, Jewellery policy, Quality, and safety policy
- PC3.** ensure that the materials are adequately isolated to prevent them from contamination. Materials: raw materials, processed materials, finished goods, etc. Contamination: Physical, Chemical, Biological & shop floor environment
- PC4.** establish and follow Good Manufacturing Practices (GMPs) laid down in applicable Food Safety and Standards Authority of India (FSSAI) guidelines. Good Manufacturing Practices (GMPs): location and layout(ergonomics), cleaning and sanitation, equipment and containers, pest control, facilities (lighting, water supply, drainage and waste disposal, air quality and ventilation), food storage, transportation, and distribution etc.
- PC5.** establish and follow allergen management system for handling and storage of raw materials
- PC6.** establish and follow monitoring systems like Hazard Analysis Critical Control Point (HACCP), product information and consumer awareness, product recall and withdrawal, and traceability HACCP: Hazard identification, identification of critical control points, establish critical limits, corrective and preventive action. Product information and consumer awareness: Product labelling and consumer education. Traceability: forward and backward traceability
- PC7.** take appropriate action in instances such as VACCP (Vulnerability Assessment Critical Control Points) and TACCP (Threat Assessment Critical Control Points)
- PC8.** plan, conduct, manage, consolidate outcomes, and close corrective actions of workplace audit on food safety as per FSSAI guidelines, address the non-conformance with root cause analysis (RCA), corrective action preventive action(CAPA)
- PC9.** address issues pertaining to food safety and quality reported by the team members
- PC10.** record information such as food safety regulations followed, inspections done, faults observed, etc. as per standard procedure
- PC11.** organize trainings and workshops on food safety aspects such as Good Manufacturing Practices (GMP), HACCP, VACCP, TACCP, etc.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** various processes that take place in a food industry
- KU2.** biological, chemical, and physical hazards in a food industry
- KU3.** types of food contaminations, their causes, and ways to prevent it
- KU4.** organisational policy and procedures for ensuring food safety (such as Visitor's Policy, Health declaration policy, Jewelry policy, Quality, and safety policy)
- KU5.** applicable regulations for ensuring food safety as listed in 'The Food Safety and Standards Act, 2006'
- KU6.** role of HACCP in food industry, its constituents and procedure to implement it in an organisation
- KU7.** VACCP and TACCP and how to implement it effectively
- KU8.** how to conduct workplace food safety audits
- KU9.** types of allergen and allergen management at workplace
- KU10.** key observations and corrective actions to be applied for ensuring food safety
- KU11.** various issues that can arise during production and other processes as faced by team
- KU12.** information to be recorded in the work process
- KU13.** how to do root cause analysis and perform corrective action and preventive actions
- KU14.** how to conduct training of workforce on various food safety procedures such as GMP, HACCP, information to be shared, ways to report accidents, escalation of issues beyond own scope, etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write an accident/incident report in local language or English
- GS2.** read and comprehend basic content to read labels, charts, signages and symbols
- GS3.** read and comprehend basic English to read product manuals for safe operation
- GS4.** question coworkers appropriately in order to clarify instructions and other issues
- GS5.** make appropriate decisions pertaining to the concerned area of work regarding the work objective, span of authority, responsibility, laid down procedure and guidelines
- GS6.** plan and organize the work schedule, work area, tools, equipment, and materials for improved productivity
- GS7.** identify probable solutions to the problems in hand
- GS8.** evaluate proposed solution with respect to key priorities and considerations
- GS9.** seek official and authorised sources of help and guidance to resolve problems that cannot be solved at one's level of authority
- GS10.** identify cause and effect relations in their area of work to anticipate potential problems and their solution
- GS11.** analyse the problem, suggest corrective actions and implement workable solutions

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure food safety at the workplace</i>	30	70	-	-
PC1. identify the biological, chemical, and physical hazards at various stages of food processing. Stages: procurement of raw material; production, manufacturing, distribution, delivery of finished product, etc.	-	-	-	-
PC2. implement food safety procedures and regulatory policies at the food processing workplace. Policies: Visitor's Policy, Health declaration policy, Jewellery policy, Quality, and safety policy	-	-	-	-
PC3. ensure that the materials are adequately isolated to prevent them from contamination. Materials: raw materials, processed materials, finished goods, etc. Contamination: Physical, Chemical, Biological & shop floor environment	-	-	-	-
PC4. establish and follow Good Manufacturing Practices (GMPs) laid down in applicable Food Safety and Standards Authority of India (FSSAI) guidelines. Good Manufacturing Practices (GMPs): location and layout(ergonomics), cleaning and sanitation, equipment and containers, pest control, facilities (lighting, water supply, drainage and waste disposal, air quality and ventilation), food storage, transportation, and distribution etc.	-	-	-	-
PC5. establish and follow allergen management system for handling and storage of raw materials	-	-	-	-
PC6. establish and follow monitoring systems like Hazard Analysis Critical Control Point (HACCP), product information and consumer awareness, product recall and withdrawal, and traceability HACCP: Hazard identification, identification of critical control points, establish critical limits, corrective and preventive action. Product information and consumer awareness: Product labelling and consumer education. Traceability: forward and backward traceability	-	-	-	-
PC7. take appropriate action in instances such as VACCP (Vulnerability Assessment Critical Control Points) and TACCP (Threat Assessment Critical Control Points)	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. plan, conduct, manage, consolidate outcomes, and close corrective actions of workplace audit on food safety as per FSSAI guidelines, address the non-conformance with root cause analysis (RCA), corrective action preventive action(CAPA)	-	-	-	-
PC9. address issues pertaining to food safety and quality reported by the team members	-	-	-	-
PC10. record information such as food safety regulations followed, inspections done, faults observed, etc. as per standard procedure	-	-	-	-
PC11. organize trainings and workshops on food safety aspects such as Good Manufacturing Practices (GMP), HACCP, VACCP, TACCP, etc.	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9904
NOS Name	Ensure food safety at the workplace
Sector	Food Processing
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQ Clearance Date	25/11/2021

FIC/N9903: Ensure workplace health and safety

Description

This unit is about following health and safety procedures at the food processing workplace.

Scope

The scope covers the following :

- Follow preventive measures to avoid accidents
- Deal with emergencies
- Manage infection control

Elements and Performance Criteria

Follow preventive measures to avoid accidents

To be competent, the user/individual on the job must be able to:

- PC1.** wear appropriate personal protective equipment (PPE) as per task requirements. PPE: gloves, hairnets, masks, ear plugs, goggles, shoes etc.
- PC2.** identify job-site hazardous work and possible causes of risk or accident at the workplace
- PC3.** deal with hazards safely and appropriately to ensure safety of self and others
- PC4.** ensure that the equipment used (such as for lifting and carrying materials, power tools, etc.) are maintained effectively
- PC5.** implement organisational safety protocols to prevent accidents and hazards
- PC6.** ensure that general health and safety equipment are readily available at all times
- PC7.** ensure that common hazard signs are displayed properly wherever required
- PC8.** use various types of fire extinguishers effectively
- PC9.** train the workforce on accident prevention techniques required at the workplace. Accident prevention techniques: role of appropriate PPE; use of fire extinguishers, dealing with hazards; identification of risks that could lead to accidents; safety protocols followed to avoid accidents; role of different types of hazard signs, safe lifting and carrying practices, etc.

Deal with emergencies

To be competent, the user/individual on the job must be able to:

- PC10.** follow workplace emergency and evacuation procedures
- PC11.** use safe methods to free a person from electrocution
- PC12.** administer appropriate first aid to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning, etc.
- PC13.** provide artificial respiration and cardio-pulmonary resuscitation (CPR) in various instances (e.g., cardiac arrest)
- PC14.** report any identified breaches in health, safety and security policies and procedures to the concerned authority

PC15. train the workforce on emergency procedures to be followed at the workplace. Emergency procedures: safe evacuation; treating a person from electrocution; immediate first aid to be given at times of cuts, bleeding, burns, choking, electric shock, poisoning, etc.; administering artificial respiration and cardio-pulmonary resuscitation (CPR); escalating issues beyond own scope, etc.

Manage infection control

To be competent, the user/individual on the job must be able to:

- PC16.** follow and enforce Good Hygiene Practices (GHP) among the team. GHP: washing hands regularly, reporting personal health issues to the concerned, undertaking preventive health check-ups at regular intervals, getting vaccinated as per standard procedures whenever required, etc.
- PC17.** identify the type of infection spread in discussion with designated personnel and relevant sources. Type of infection spread: severity; precautions to be taken; safety protocols to be followed during spread; sanitisers to be used, etc.
- PC18.** ensure the work area, equipment and related facilities are being sanitised effectively as per organisational schedule and work requirements
- PC19.** ensure that materials used for sanitisation are stored appropriately and readily available at times of need
- PC20.** take appropriate action at times of illness to self and others in the team
- PC21.** train the workforce on infection control practices followed at the workplace. Infection control practices: precautions to be taken; types of sanitisers to be used; ensuring appropriate sanitization of self and work area; reporting illness to self and others promptly, etc.
- PC22.** review standard operating procedures (SOPs) as per organisational schedule to ensure compliance with regulatory requirements
- PC23.** ensure periodic health check-up of all workers in compliance with FSSAI guidelines
- PC24.** provide regulatory support and process improvements which have an impact on regulatory affairs related to quality and safety assurance in respective departments

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** meaning of 'hazards' and 'risks'
- KU2.** various types of risks, hazards and accidents at the workplace and their possible causes
- KU3.** standard practices to be followed to control and prevent risks, hazards, and accidents
- KU4.** where to find all the general health and safety equipment in the workplace
- KU5.** parameters to be assessed during review of SOPs and compliances
- KU6.** how to improve regulations and processes in an organisation as per required quality and safety standards
- KU7.** procedure to conduct audits pertaining to workplace health and safety
- KU8.** parameters to be assessed during health and safety audits and acceptability levels of appropriateness
- KU9.** how to address team issues relating to workplace health and safety
- KU10.** documents and records to be maintained in the work process
- KU11.** types of personal protective equipment used such as eye protection, hard hats, gloves apron, rubber boots, etc. and its importance while conducting the tasks

- KU12.** how to deal with various types of hazards safely and appropriately
- KU13.** how to ensure that the equipment used is maintained effectively
- KU14.** preventative measures and remedial actions to be taken to avoid accidents
- KU15.** various types of safety signs and their relevance at the workplace
- KU16.** various causes of fire, ways to prevent them and rescue techniques to be followed at times of fire
- KU17.** use of different types of fire extinguishers
- KU18.** how to train the workforce on various accident prevention techniques
- KU19.** workplace emergency and evacuation procedures
- KU20.** how to administer immediate first aid to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning, etc.
- KU21.** procedure followed for providing artificial respiration and cardio-pulmonary resuscitation (CPR) to the affected
- KU22.** impact of breach in health, safety and security policies and procedures on self, team, and work process
- KU23.** how to train the workforce on emergency procedures to be followed at the workplace
- KU24.** information sources and the factors to be considered for determining the type of infection
- KU25.** procedure to carry out sanitization of work area, equipment, and related facilities
- KU26.** how to act at times of illness to self and others at the workplace
- KU27.** train the workforce on infection control practices followed at the workplace
- KU28.** storing sanitization materials appropriately

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write an accident/incident report in local language or English
- GS2.** read and comprehend basic content to read labels, charts, signages and symbols
- GS3.** read and comprehend basic English to read product manuals for safe operation
- GS4.** question coworkers appropriately in order to clarify instructions and other issues
- GS5.** make appropriate decisions pertaining to the concerned area of work regarding the work objective, span of authority, responsibility, laid down procedure and guidelines
- GS6.** plan and organize the work schedule, work area, tools, equipment, and materials for improved productivity
- GS7.** identify probable solutions to the problems in hand
- GS8.** evaluate proposed solution with respect to key priorities and considerations
- GS9.** seek official and authorised sources of help and guidance to resolve problems that cannot be solved at one's level of authority
- GS10.** identify cause and effect relations in their area of work to anticipate potential problems and their solution

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow preventive measures to avoid accidents</i>	13	31	-	-
PC1. wear appropriate personal protective equipment (PPE) as per task requirements. PPE: gloves, hairnets, masks, ear plugs, goggles, shoes etc.	-	-	-	-
PC2. identify job-site hazardous work and possible causes of risk or accident at the workplace	-	-	-	-
PC3. deal with hazards safely and appropriately to ensure safety of self and others	-	-	-	-
PC4. ensure that the equipment used (such as for lifting and carrying materials, power tools, etc.) are maintained effectively	-	-	-	-
PC5. implement organisational safety protocols to prevent accidents and hazards	-	-	-	-
PC6. ensure that general health and safety equipment are readily available at all times	-	-	-	-
PC7. ensure that common hazard signs are displayed properly wherever required	-	-	-	-
PC8. use various types of fire extinguishers effectively	-	-	-	-
PC9. train the workforce on accident prevention techniques required at the workplace. Accident prevention techniques: role of appropriate PPE; use of fire extinguishers, dealing with hazards; identification of risks that could lead to accidents; safety protocols followed to avoid accidents; role of different types of hazard signs, safe lifting and carrying practices, etc.	-	-	-	-
<i>Deal with emergencies</i>	8	18	-	-
PC10. follow workplace emergency and evacuation procedures	-	-	-	-
PC11. use safe methods to free a person from electrocution	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. administer appropriate first aid to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning, etc.	-	-	-	-
PC13. provide artificial respiration and cardio-pulmonary resuscitation (CPR) in various instances (e.g., cardiac arrest)	-	-	-	-
PC14. report any identified breaches in health, safety and security policies and procedures to the concerned authority	-	-	-	-
PC15. train the workforce on emergency procedures to be followed at the workplace. Emergency procedures: safe evacuation; treating a person from electrocution; immediate first aid to be given at times of cuts, bleeding, burns, choking, electric shock, poisoning, etc.; administering artificial respiration and cardio-pulmonary resuscitation (CPR); escalating issues beyond own scope, etc.	-	-	-	-
<i>Manage infection control</i>	9	21	-	-
PC16. follow and enforce Good Hygiene Practices (GHP) among the team. GHP: washing hands regularly, reporting personal health issues to the concerned, undertaking preventive health check-ups at regular intervals, getting vaccinated as per standard procedures whenever required, etc.	-	-	-	-
PC17. identify the type of infection spread in discussion with designated personnel and relevant sources. Type of infection spread: severity; precautions to be taken; safety protocols to be followed during spread; sanitisers to be used, etc.	-	-	-	-
PC18. ensure the work area, equipment and related facilities are being sanitised effectively as per organisational schedule and work requirements	-	-	-	-
PC19. ensure that materials used for sanitisation are stored appropriately and readily available at times of need	-	-	-	-
PC20. take appropriate action at times of illness to self and others in the team	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. train the workforce on infection control practices followed at the workplace. Infection control practices: precautions to be taken; types of sanitisers to be used; ensuring appropriate sanitization of self and work area; reporting illness to self and others promptly, etc.	-	-	-	-
PC22. review standard operating procedures (SOPs) as per organisational schedule to ensure compliance with regulatory requirements	-	-	-	-
PC23. ensure periodic health check-up of all workers in compliance with FSSAI guidelines	-	-	-	-
PC24. provide regulatory support and process improvements which have an impact on regulatory affairs related to quality and safety assurance in respective departments	-	-	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9903
NOS Name	Ensure workplace health and safety
Sector	Food Processing
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQC Clearance Date	25/11/2021

FIC/N9902: Work effectively in an organisation

Description

This unit is about working effectively with others.

Scope

The scope covers the following :

- Communicate effectively
- Work in a team effectively
- Respect diversity

Elements and Performance Criteria

Communicate effectively

To be competent, the user/individual on the job must be able to:

- PC1.** obtain complete information and instructions from designated personnel
- PC2.** reciprocate understanding and seek clarifications whenever required
- PC3.** provide information accurately and clearly
- PC4.** use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive

Work in a team effectively

To be competent, the user/individual on the job must be able to:

- PC5.** plan tasks to be performed as per priority and need
- PC6.** consult with and assist others to maximize effectiveness and efficiency at work
- PC7.** escalate problems and grievances beyond own scope to the concerned authority
- PC8.** take appropriate action to resolve conflicts at the workplace

Respect diversity

To be competent, the user/individual on the job must be able to:

- PC9.** maintain a gender-neutral behaviour with everyone at the workplace
- PC10.** empathise with People with Disabilities (PwD) and offer help, if required
- PC11.** recognise and report incidents of harassment and discrimination to appropriate authority

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational quality procedures and processes associated with work
- KU2.** standards, policies, and procedures followed in the organization relevant to employment, harassment, discrimination and performance conditions
- KU3.** reporting structure, inter-dependent functions, lines, and procedures applicable at the workplace

- KU4.** different types of harassment and discrimination based on gender, disability, caste, religion, and culture
- KU5.** components of effective communication and its importance
- KU6.** importance of teamwork in organizational and individual success
- KU7.** importance of ethics and discipline for professional success
- KU8.** how to express and address grievances appropriately and effectively
- KU9.** importance and ways of managing interpersonal conflict effectively
- KU10.** different types of disabilities and the challenges faced by persons with disability (PwD)
- KU11.** laws, acts and provisions defined for PwD
- KU12.** importance of gender sensitivity and equality
- KU13.** legislations, grievance redressal mechanisms, and penalties against harassment in the workplace

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate information, doubts and concerns about work related matters in local language or Hindi/English
- GS2.** read and interpret information given in local language or Hindi/English
- GS3.** establish priorities and deadlines in consultation with other and record them
- GS4.** be punctual
- GS5.** listen to others concerns and doubts carefully and address them
- GS6.** be courteous

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively</i>	8	13	-	-
PC1. obtain complete information and instructions from designated personnel	2	3	-	-
PC2. reciprocate understanding and seek clarifications whenever required	2	3	-	-
PC3. provide information accurately and clearly	2	3	-	-
PC4. use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive	2	4	-	-
<i>Work in a team effectively</i>	8	14	-	-
PC5. plan tasks to be performed as per priority and need	2	4	-	-
PC6. consult with and assist others to maximize effectiveness and efficiency at work	2	3	-	-
PC7. escalate problems and grievances beyond own scope to the concerned authority	2	3	-	-
PC8. take appropriate action to resolve conflicts at the workplace	2	4	-	-
<i>Respect diversity</i>	6	12	-	-
PC9. maintain a gender-neutral behaviour with everyone at the workplace	2	4	-	-
PC10. empathise with People with Disabilities (PwD) and offer help, if required	2	4	-	-
PC11. recognise and report incidents of harassment and discrimination to appropriate authority	2	4	-	-
NOS Total	22	39	-	-

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9902
NOS Name	Work effectively in an organisation
Sector	Food Processing
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQC Clearance Date	25/11/2021

SGJ/N1702: Optimize resource utilization at workplace

Description

This unit is about adopting sustainable practices and optimizing use of resources, especially material, energy and waste, in day-to-day operations at work

Scope

The scope covers the following :

- Material conservation practices
- Energy/electricity conservation practices
- Effective waste management/recycling practices

Elements and Performance Criteria

Material conservation practices

To be competent, the user/individual on the job must be able to:

- PC1.** identify ways to optimize usage of material including water in various tasks/activities/processes
- PC2.** check for spills/leakages in various tasks/activities/processes
- PC3.** plug spills/leakages and escalate to appropriate authority if unable to rectify
- PC4.** carry out routine cleaning of tools, machines and equipment

Energy/electricity conservation practices

To be competent, the user/individual on the job must be able to:

- PC5.** identify ways to optimize usage of electricity/energy in various tasks/activities/processes
- PC6.** check if the equipment/machine is functioning normally before commencing work and rectify wherever required
- PC7.** report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment
- PC8.** ensure electrical equipment and appliances are properly connected and turned off when not in use

Effective waste management/recycling practices

To be competent, the user/individual on the job must be able to:

- PC9.** identify recyclable and non-recyclable, and hazardous waste generated
- PC10.** segregate waste into different categories
- PC11.** dispose non-recyclable waste appropriately
- PC12.** deposit recyclable and reusable material at identified location
- PC13.** follow processes specified for disposal of hazardous waste

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** potential hazards, risks and threats based on the nature of work
- KU2.** layout of the workstation and electrical and thermal equipment used
- KU3.** organizations procedures for minimizing waste
- KU4.** efficient and inefficient utilization of material and water
- KU5.** ways of efficiently managing material and water in the process
- KU6.** basics of electricity and prevalent energy efficient devices
- KU7.** ways to recognize common electrical problems
- KU8.** common practices of conserving electricity
- KU9.** usage of different colours of dustbins
- KU10.** categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- KU11.** waste management and methods of waste disposal
- KU12.** common sources of pollution and ways to minimize it

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** record data on waste disposal at workplace
- GS2.** complete statutory documents relevant to safety and hygiene
- GS3.** read Standard Operating Practices (SOP) documents
- GS4.** communicate with colleagues on the significance of greening of jobs
- GS5.** make timely decisions for efficient utilization of resources
- GS6.** complete tasks efficiently and accurately within stipulated time
- GS7.** work with supervisors/team members to carry out work related tasks
- GS8.** identify cause and effect of greening of jobs

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Material conservation practices</i>	4	8	-	-
PC1. identify ways to optimize usage of material including water in various tasks/activities/processes	1	2	-	-
PC2. check for spills/leakages in various tasks/activities/processes	1	2	-	-
PC3. plug spills/leakages and escalate to appropriate authority if unable to rectify	1	2	-	-
PC4. carry out routine cleaning of tools, machines and equipment	1	2	-	-
<i>Energy/electricity conservation practices</i>	4	8	-	-
PC5. identify ways to optimize usage of electricity/energy in various tasks/activities/processes	1	2	-	-
PC6. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	1	2	-	-
PC7. report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment	1	2	-	-
PC8. ensure electrical equipment and appliances are properly connected and turned off when not in use	1	2	-	-
<i>Effective waste management/recycling practices</i>	5	10	-	-
PC9. identify recyclable and non-recyclable, and hazardous waste generated	1	2	-	-
PC10. segregate waste into different categories	1	2	-	-
PC11. dispose non-recyclable waste appropriately	1	2	-	-
PC12. deposit recyclable and reusable material at identified location	1	2	-	-
PC13. follow processes specified for disposal of hazardous waste	1	2	-	-
NOS Total	13	26	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N1702
NOS Name	Optimize resource utilization at workplace
Sector	Green Jobs
Sub-Sector	Other Green Jobs
Occupation	Resource Optimization
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQC Clearance Date	25/11/2021

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FIC/N7617.Coordinate and conduct analytical work for food quality control and assurance	30	50	-	20	100	15
FIC/N7618.Maintain quality processes and standards in manufacturing food products	30	50	-	20	100	15
FIC/N7619.Regulate laboratory operations	30	50	-	20	100	15
FIC/N7620.Manage quality assurance and quality control framework	30	50	-	20	100	15
FIC/N9904.Ensure food safety at the workplace	30	70	-	-	100	10
FIC/N9903.Ensure workplace health and safety	30	70	-	-	100	10
FIC/N9902.Work effectively in an organisation	22	39	-	-	61	10
SGJ/N1702.Optimize resource utilization at workplace	13	26	-	-	39	10
Total	215	405	-	80	700	100

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	<p>Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.</p>
Technical Knowledge	<p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p>
Core Skills/ Generic Skills (GS)	<p>Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.</p>
Electives	<p>Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.</p>
Options	<p>Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.</p>