Model Curriculum

QP Name: Food Sampler

QP Code: FIC / Q7609

QP Version: 1.0

NSQF Level: 3.5

Model Curriculum Version: 1.0

Food Industry Capacity and Skill Initiative (FICSI)
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Training Parameters

Sector	Food Processing
Sub-Sector	Multi Sectoral
Occupation	Quality Analysis / Assurance
Country	India
NSQF Level	3.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 2113.9900
Minimum Educational Qualification and Experience	1. 11th Grade Pass 2. Completed 1st year of 3-year diploma after 10th 3. 10th grade pass & pursuing continuous schooling. 4. 8th grade pass with 2hrs of NTC plus 1year NAC/CITS. 5.Class 12th completed in science stream. 6. 10th grade pass with 1yera of relevant experience.
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	26/06/2023
Next Review Date	23/06/2026
NSQC Approval Date	23/06/2023
QP Version	1.0
Model Curriculum Creation Date	15/02/2023
Model Curriculum Valid Up to Date	14/02/2026
Model Curriculum Version	1.0
Minimum Duration of the Course	390 hours
Maximum Duration of the Course	390 hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the participants will be able to:

- Prepare the lab for testing samples
- Prepare sample for testing
- Implement Health and Safety practices at workplace
- Employability Skills

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
FIC/N7627: Prepare the Lab for testing samples **NOS Version 1.0** **NSQF Level 3.5**	**40:00**	**80:00**	**60:00**	**00:00**	**180:00**
Module 1: Introduction to Food Processing Sector and the Job of 'Food Sampler"	10:00	00:00	00:00	00:00	10:00
Module 2: Prepare the facility to carry out testing of samples	16:00	40:00	30:00	00:00	86:00
Module 3: Receive and handle the samples for testing	14:00	40:00	30:00	00:00	84:00
FIC/N7628: Prepare sample for testing **NOS Version 1.0** **NSQF Level 2**	**30:00**	**60:00**	**60:00**	**00:00**	**150:00**
Module 4: Implement Sample Preparation Processes for testing	30:00	60:00	60:00	00:00	150:00
FIC/N9907 Apply Food Safety and Hygiene in the laboratory **NOS Version No. 1.0** **NSQF Level 3.5**	**10:00**	**20:00**	**00:00**	**00:00**	**30:00**

Module 5: Practice Food Safety and Hygiene in the laboratory	10:00	20:00	00:00	00:00	30:00
DGT/VSQ/N0101 – Employability Skills	**12:00**	**18:00**	**00:00**	**00:00**	**30:00**
NOS Version No. 1.0					
NSQF Level 3.5					
Module 6: Employability Skills	12:00	18:00	00:00	00:00	**30:00**
Total Duration	**92:00**	**178:00**	**120:00**	**00:00**	**390:00**

Module Details

Module 1: Introduction to Food Processing Sector and the Job of Food Sampler

Mapped to FIC/N7627 v1.0

Terminal Outcomes:

- Describe the food processing industry and its sub-sectors in brief
- Discuss the roles and responsibilities of Food Samper

Duration: *10:00*	**Duration**: *00:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss about the food processing industry and Food analysis sector and its growth trends • Discuss the career opportunities available for Food Sampler in the food processing industry • Explain the processes and terminologies used in preparation of samples for testing • List the sequence of operations to be performed in this job • List the various types of activities undertaken for preparation of sample for testing like receiving and handling samples, storing the same for deferred testing	
Classroom Aids:	
Whiteboard, Marker, Duster, Projector, Laptop, PowerPoint Presentation	
Tools, Equipment, and Other Requirements	
Nil	

Module 2: Prepare the facility to carry out testing of samples

Mapped to FIC/N7627 v1.0

Terminal Outcomes:

- Organize lab to carry out testing of samples
- Receive/handle the samples for testing
- Carry out visual inspection of samples

Duration: *16:00*	**Duration**: *40:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the process of cleaning process the work area to remove dirt, pest and flies • Discuss the SOP guidelines to be adhered to clean the equipment • List the approved sanitizers and cleaning agents for cleaning purpose • Discuss the various equipment used for preparation of samples for testing • Discuss the sterility testing of the equipment • Discuss the steps involved in glassware cleaning • Explain how to check the calibration of equipment • Discuss the importance of verifying the temperatures in the refrigerators and freezers • Discuss how to clean the N-Evap, water bath, refrigerators, and foreheads • List the guidelines for storage, disposal and archiving of samples • Discuss the safety guidelines at work • List the operating instructions of various equipment • Discuss the troubleshooting techniques in case of equipment breakdown • Discuss the importance of maintaining supplies • List various activities for preventive maintenance • Explain the expected minor faults in machines and how to repair them	• Demonstrate the process of cleaning the work area to get rid of dirt, pest and flies • Show how to clean and sanitize work place and equipment • Demonstrate the sterility testing • Demonstrate the various steps of cleaning the glassware • Demonstrate the calibration of various equipment in preparation of samples for testing • Show how to check the temperature of freezers and refrigerators • Demonstrate the cleaning methods of N-Evap, water bath, refrigerators, and foreheads • Demonstrate the working of various equipment • Illustrate the troubleshooting techniques • Walk through the list of activities of preventive maintenance
Classroom Aids:	
Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation, Participant Handbook, etc.	

Tools, Equipment, and Other Requirements
N-Evap, water bath, Freezers, refrigerators, foreheads, cleaning agents, sanitizers, PPE Kits

Module 3: Receive and handle samples for testing

Mapped to FIC/N7627 v1.0

Terminal Outcomes:

- Check the condition of the samples received
- Carry out visual inspection of samples

Duration: *14:00*	**Duration**: *40:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the process of checking the physical conditions of the samples and they should conform to the standards set by the lab • Discuss the process followed for checking the identity of the sample received. (plant based, animal based, use by date, and state of maturity) • Explain how to check for any physical defects in the container of the sample • Verify the sample contains the preservation details of the food item. • Explain how to check the collection details of the samples while receiving. Details like sample number, collecting official's name and date, sampling point(address), batch number, transport conditions (mode and condition of transport), date of submission to the lab, etc • Check all quality parameters as per QC norms are met • Verify the chain of custody of the sample(s) and the required storage parameters for the sample is maintained. • Discuss how to document the product's condition at the time of receiving as per the format maintained by the organization • Verify the physical conditions of the product received for testing like solid, liquid, semi solid, frozen • Discuss the food matrix of the sample • Verify the product is free from any contaminants like fungus, pests etc • Explain the sample preparation post storage like thawing, homogenizing, conditioning etc	• Demonstrate the process of checking the properties and physical conditions of the sample received • Show how to verify the collection details of the sample received • Illustrate in detail various QC norms • Demonstrate the steps to document the details of the samples received, their physical condition, preservative details • Illustrate the techniques used to check the quality of containers, pouches and other packaging materials used in samples • Demonstrate the lab and personal safety protocols • Demonstrate sample preparation post storage like thawing, homogenizing, conditioning etc

• Explain basic microbiology concepts and terminologies • Explain basics of standards like ISO 17020, ISO 17025 and ISO 17065 • Discuss the basic statistics terminologies	
Classroom Aids:	
Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation, Participant Handbook	
Tools, Equipment, and Other Requirements	
Mechanical blender, Sterile glass or metal high-speed blender jar with cover, Balance, with weights, Sterile beakers, 250 ml, low-form, covered with aluminum foil, Sterile graduated pipets, 1.0 and 10.0 ml, Butterfield's phosphate-buffered dilution water, sterilized in bottles, Sterile knives, forks, spatulas, forceps, scissors, tablespoons, and tongue depressors (for sample handling)	

Module 4: Implement Sample Preparation Processes for testing

Mapped to FIC/N7628 v1.0

Terminal Outcomes:

- Carry out sample preparation for testing
- Store samples safely

Duration: *30:00*	**Duration**: *60:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the number of samples to be prepared for testing • Explain the container specifications for storing samples ○ clean, dry, leak-proof, widemouthed, sterile, suitable sized containers for samples of the product • Explain the riffling and quartering methods (bulk solid sample) to reduce the sample to analytical portions • carry out homogenization of liquid sample for consistency • discuss the procedure to measure portion size, weight, volume, density of the sample to be tested • Explain the FSSAI and BIS rules and regulations for sample preparation. • Explain the documentation process for the samples prepared • Discuss the process of transferring the samples to the lab for testing • Discuss the storage mechanism of samples whose testing is delayed • Discuss the mechanism of checking the details on the samples • Explain how to store the samples as per the priority basis (most urgent, urgent or normal priority) • Explain the details of the directory for sample kept under storage • preserve the sample as per their prescribed light and temperature conditions to prevent spoilage • Discuss the waste disposal process followed by the organization procedure	• Demonstrate the riffling and quartering methods (bulk solid sample) to reduce the sample to analytical portions • Perform homogenization of liquid sample for consistency • Demonstrate the measuring techniques of food samples • List the documents maintained for storing the sample details • Show the process of storing the samples • Demonstrate the techniques of verifying the samples for details
Classroom Aids:	

Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation, Participant Handbook
Tools, Equipment, and Other Requirements
Mechanical blender, Sterile glass or metal high-speed blender jar with cover, Balance, with weights, Sterile beakers, 250 ml, low-form, covered with aluminum foil, Sterile graduated pipets, 1.0 and 10.0 ml, Butterfield's phosphate-buffered dilution water, sterilized in bottles, Sterile knives, forks, spatulas, forceps, scissors, tablespoons, and tongue depressors (for sample handling), waring blender, pestle and mortar, hammer mill, ball mill, centrifugal mill, knife mill, riffle cutter, straight-line sampler organisation’s quality manual

Module 5: Practice Food Safety and Hygiene in the laboratory

Mapped to FIC/N9907 v1.0

Terminal Outcomes:

- implement practices to maintain food safety and hygiene in laboratory

Duration: *10:00*	**Duration**: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss latest updates for food safety regulations and standards with respect to products, packaging and labelling • Explain the measures control potential food safety hazards within the lab • Explain the measures to control measure to avoid cross contamination of food samples • Discuss the hygiene and sanitation practices within the lab • Explain storage practices followed by the organization • Discuss food safety protocols • Discuss practices to control food allergens and their management • Explain lab audits, documentation and record keeping process followed by the organisation • Explain HACCP (Hazard Analysis and Critical Control Points), food borne illness and their causes • Discuss food safety regulations and standards, food packaging and food labelling • Explain food packaging and storage techniques	• Role play to revisit the hygiene and sanitation practices followed in the lab • Demonstrate the storage practices • Perform documentation and record keeping
Classroom Aids:	
Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation, Participant Handbook	
Tools, Equipment, and Other Requirements	
Sample standard operating procedure, sterilized in bottles, Sterile knives, forks, spatulas, forceps, scissors, tablespoons, and tongue depressors (for sample handling), waring blender, pestle and mortar, hammer mill, ball mill, centrifugal mill, knife mill, riffle cutter, straight-line sampler organisation's quality manual	

Module 6: Employability Skills

Mapped to DGT/VSQ/N0101 v1.0

Terminal Outcomes:

- Discuss Employability skills, Constitutional values, digital, financial, and legal literacy
- Explain about diversity and Inclusion, communication skills, and customer service
- State the relevance of entrepreneurship skills and how to be ready for jobs and apprenticeship

Duration: *12:00*	**Duration**: *18:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the importance of Employability Skills in meeting the job requirements • Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen • Show how to practice different environmentally sustainable practices • Discuss 21st century skills. • Display positive attitude, self - motivation, problem solving, time management skills and continuous learning mindset in different situations • Use appropriate basic English sentences/phrases while speaking • Discuss the significance of reporting sexual harassment issues in time • Discuss the significance of using financial products and services safely and securely • Explain the importance of managing expenses, income, and savings • Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely • Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges • Differentiate between types of customers	• Demonstrate how to communicate in a well -mannered way with others • Demonstrate working with others in a team • Show how to conduct oneself appropriately with all genders and PwD • Show how to operate digital devices and use the associated applications and features, safely and securely • Create a biodata

• Explain the significance of identifying customer needs and addressing them • Discuss the significance of maintaining hygiene and dressing appropriately • Use various sources to search and apply for jobs • Discuss the significance of dressing up neatly and maintaining hygiene for an interview • Discuss how to search and register for apprenticeship opportunities	

Classroom Aids:
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook

Tools, Equipment and Other Requirements
Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below) , UPS, Scanner cum Printer, Computer Tables, Computer Chairs, LCD Projector, White Board 1200mm x 900mm

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate	Science	2	B.Sc. (Entomology & Apiculture) from UGC recognized university with two years' experience in the relevant field. **OR** Advanced Post Graduate Diploma (Minimum 2 years) (With any Government Certificate Program in Bee Keeping/ Honey processing with two years' experience in the relevant filed.	2	Training individuals on Bee keeping/ Honey processing	

Trainer Certification	
Domain Certification	**Platform Certification**
"Honey Processor", "FIC/Q7609, V1.0", Minimum accepted score is 80%	"Trainer", (VETT AND SKILL)"MEP/Q2601, V2.0" with a scoring of minimum 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate	Science	2	B.Sc. (Entomology & Apiculture) from UGC recognized university with two years' experience in the relevant field. **OR** Advanced Post Graduate Diploma (Minimum 2 years) (With any Government Certificate Program in Bee Keeping/ Honey processing with two years' experience in the relevant filed.	2	Training individuals on Bee keeping/ Honey processing	

Assessor Certification	
Domain Certification	**Platform Certification**
"Honey Processor", "FIC/Q7609, V1.0", Minimum accepted score is 80%	"Assessor",(VETT AND SKILL) "MEP/Q2701, V2.0" with a scoring of minimum 80%

Assessment Strategy

This section includes the processes involved in identifying, gathering and interpreting information to evaluate the learner on the required competencies of the program.

Assessment will be based on the concept of Independent Assessors empanelled with Assessment Agencies, identified, selected, trained and certified on Assessment techniques. These assessors would be aligned to assess as per the laid down criteria.

Assessment Agency would conduct assessment only at the training centres of Training Partner or designated testing centers authorized by FICSI.

Ideally, the assessment will be a continuous process comprising of three distinct steps:

A. Mid- term assessment

B. Term / Final Assessment

Each National Occupational Standard (NOS) in the respective QPs will be assigned weightage. Therein each Performance Criteria in the NOS will be assigned marks for theory and / or practical based on relative importance and criticality of function.

This will facilitate preparation of question bank / paper sets for each of the QPs. Each of these papers sets / question bank so created by the Assessment Agency will be validated by the industry subject matter experts through FICSI, especially with regard to the practical test and the defined tolerances, finish, accuracy etc.

The following tools are proposed to be used for final assessment:

i. Written Test: This will comprise of (i) True / False Statements (ii) Multiple Choice Questions (iii) Matching Type Questions. Online system for this will be preferred.

ii. Practical Test: This will comprise a test job to be prepared as per project briefing following appropriate working steps, using necessary tools, equipment and instruments. Through observation it will be possible to ascertain candidate's aptitude, attention to details, quality consciousness etc. The end product will be measured against the pre-decided MCQ filled by the Assessor to gauge the level of his skill achievements.

iii. Structured Interview: This tool will be used to assess the conceptual understanding and the behavioural aspects as regards the job role and the specific task at hand.

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do **upon the completion of the training**.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do **upon the completion of a module.** A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
TVET	Technical and Vocational Education and Training
SOP	Technical and Vocational Education and Training
OH&S	Occupational Health and Safety
PPE	Personal Protective Equipment
HACCP	Hazard Analysis and Critical Control Points
VACCP	Vulnerability Assessment Critical Control Points
TACCP	Threat Assessment Critical Control Points
FSSAI	Food Safety and Standards Authority of India
FIFO	First In First Out
FEFO	First Expire First Out
GMP	Good Manufacturing Practices
GHP	Good Hygiene Practices
CPR	Cardiopulmonary Resuscitation