



Model Curriculum

QP Name: Fruit Pulp Processing Technician

QP Code: FIC/Q0106

QP Version: 3.0

NSQF Level: 3

Model Curriculum Version: 3.0

Food Industry Capacity and Skill Initiative (FICSI)
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Training Parameters

Sector	Food Processing
Sub-Sector	Fruits and Vegetables
Occupation	Processing- Fruits and Vegetables
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 7514.9900
Minimum Educational Qualification and Experience	1. Class 10th passed 2. Class 8th passed and 2 years of relevant experience 3. NSQF Level 3 qualification certificate of food processing sector with 2 years of relevant experience 4. Ability to read and write with 5 years of relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 years
Last Reviewed On	24/02/2022
Next Review Date	23/02/2025
NSQC Approval Date	24/02/2022
QP Version	3.0
Model Curriculum Creation Date	10/01/2022
Model Curriculum Valid Up to Date	24/02/2025
Model Curriculum Version	3.0
Minimum Duration of the Course	300 hours
Maximum Duration of the Course	500 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:

- Perform various tasks to prepare for fruit pulp processing
- Carry out various activities to produce different types of fruits pulp
- Perform various tasks to prepare squash and juices
- Carry out the activities to prepare jam, jelly, and ketchup
- Apply necessary health and safety practices to ensure workplace health and safety
- Work with others effectively
- Use resources at the workplace optimally

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module	32:00 Hours	12:00 Hours	00:00 Hours	00:00 Hours	44:00 Hours
Module 1: Introduction to Food Processing Industry and the job of 'Fruit Pulp Processing Technician'	04:00 Hours	00:00 Hours	00:00 Hours	00:00 Hours	04:00 Hours
Module 14: Employability and Entrepreneurship Skills	28:00 Hours	12:00 Hours	00:00 Hours	00:00 Hours	40:00 Hours
FIC/N9026 – Prepare for Production NOS Version No. 1.0 NSQF Level 3	12:00 Hours	32:00 Hours	00:00 Hours	00:00 Hours	44:00 Hours
Module 2: Prepare for production	12:00 Hours	32:00 Hours	00:00 Hours	00:00 Hours	44:00 Hours
FIC/N0122 Produce Fruit Pulp from Various Fruits NOS Version No. 2.0 NSQF Level 3	44:00 Hours	92:00 Hours	00:00 Hours	00:00 Hours	136:00 Hours
Module 3: Wash and Sort the Fruits for Processing	08:00 Hours	16:00 Hours	00:00 Hours	00:00 Hours	24:00 Hours
Module 4: Peel, De-seed and Destone the Fruits	08:00 Hours	16:00 Hours	00:00 Hours	00:00 Hours	24:00 Hours

Module 5: Fruit Pulp Extraction and Pre-cooking of the Pulp	12:00 Hours	22:00 Hours	00:00 Hours	00:00 Hours	34:00 Hours
Module 6: Aseptic Sterilization and Packing of Fruit Pulp	08:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	28:00 Hours
Module 7: Can the Fruit Pulp	08:00 Hours	18:00 Hours	00:00 Hours	00:00 Hours	26:00 Hours
FIC/N9901: Implement health and safety practices at the workplace NOS Version No.: 1.0 NSQF Level: 3	08:00 Hours	16:00 Hours	00:00 Hours	00:00 Hours	24:00 Hours
Module 8: Ensuring food safety and personal hygiene	04:00 Hours	8:00 Hours	00:00 Hours	00:00 Hours	12:00 Hours
Module 9: Managing accidents and emergencies	04:00 Hours	08:00 Hours	00:00 Hours	00:00 Hours	12:00 Hours
FIC/N9902: Work effectively in an organization NOS Version No.: 1.0 NSQF Level: 3	08:00 Hours	08:00 Hours	00:00 Hours	00:00 Hours	16:00 Hours
Module 10: Work effectively in an organization	08:00 Hours	08:00 Hours	00:00 Hours	00:00 Hours	16:00 Hours
SGJ/N1702: Optimize resource utilization at workplace NOS Version No.: 1.0 NSQF Level: 3	12:00 Hours	24:00 Hours	00:00 Hours	00:00 Hours	36:00 Hours
Module 11: Material conservation	04:00 Hours	08:00 Hours	00:00 Hours	00:00 Hours	12:00 Hours
Module 12: Energy/ electricity conservation	04:00 Hours	08:00 Hours	00:00 Hours	00:00 Hours	12:00 Hours
Module 13: Waste management/recycling	04:00 Hours	08:00 Hours	00:00 Hours	00:00 Hours	12:00 Hours
Total Duration	116:00 Hours	184:00 Hours	00:00 Hours	00:00 Hours	300:00 Hours

Elective Modules

The table lists the elective modules, their duration and mode of delivery.

Elective 1: Produce squash and juices

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
FIC/N0103 – Produce squash and juices NOS Version No. 2.0 NSQF Level 3	36:00	74:00	00:00	00:00	110:00
Module 15: Extraction of Fruit Juice for Squash and Juices	10:00	18:00	00:00	00:00	28:00
Module 16: Pasteurization and Clarification of the Extracted Juice	08:00	16:00	00:00	00:00	24:00
Module 17: Prepare the Squash	08:00	16:00	00:00	00:00	24:00
Module 18: Fill, Pack and Store Juice and Squash	06:00	16:00	00:00	00:00	22:00
Module 19: Perform Post-Production Cleaning and Regular Maintenance of Equipment	04:00	08:00	00:00	00:00	12:00
Total Duration	36:00	74:00	00:00	00:00	110:00

Elective 2: Produce jam, jelly and ketchup

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
FIC/N0111 – Produce jam, jelly and ketchup NOS Version No. 2.0 NSQF Level 3	30:00	60:00	00:00	00:00	90:00
Module 20: Prepare Jam and Jelly	10:00	20:00	00:00	00:00	30:00
Module 21: Prepare the Ketchup	08:00	16:00	00:00	00:00	24:00
Module 22: Fill and Pack Jam, Jelly, and Ketchup	08:00	16:00	00:00	00:00	24:00
Module 23: Post Production Cleaning and Regular Maintenance	04:00	08:00	00:00	00:00	12:00
Total Duration	30:00	60:00	00:00	00:00	90:00

Module Details

Module 1: Introduction to Food Processing Sector and the Job of 'Fruit Pulp Processing Technician'

Bridge Module

Terminal Outcomes:

- Describe the food processing industry and its sub-sectors in brief
- Discuss the roles and responsibilities of a Fruit Pulp Processing Technician

Duration: 04:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Define food processing and fruits and vegetables processing • Discuss the food processing industry and in brief • Explain the terminologies used in the process of food processing • Discuss the standard business etiquette and code of conduct in the food processing industry • Discuss the career opportunities available to a Fruit Pulp Processing Technician in the food processing industry 	
Classroom Aids:	
Whiteboard, Marker, Duster, Projector, Laptop, PowerPoint Presentation	
Tools, Equipment, and Other Requirements	
Nil	

Module 2: Prepare for production

Mapped to FIC/N9026 v1.0.

Terminal Outcomes:

- Discuss the standard practices to be followed for production
- Demonstrate the tasks to be performed at the workplace for planning the production

Duration:12:00	Duration:32:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Elucidate production planning process. • Discuss analysis and interpretation of various process charts, product flow charts, etc. • Explain the resource management process. • Calculate procedure to estimate manpower and raw material. • List down equipment type and its use. • Explain the capacity utilization calculation. • Discuss the organizational policies and SOP on cleanliness. • List down the basic concept of food safety and hygiene. • Describe the operating procedure and general maintenance of food production machineries. • State waste management procedures. • List down the methods to inspect tools, equipment and machinery. • Discuss the procedure to allot work or responsibility to the team. 	<ul style="list-style-type: none"> • Apply work requirements by obtaining instructions from the supervisor. • Instructions: process chart, product flow chart, formulation, chart, etc. • Prepare, plan and prioritize tasks as per work schedule • Tasks: inspect, clean, maintain, verify the area and tools, etc. • Calculate the manpower and material requirements as per work requirement • Material: raw materials and packaging materials. • Show the required quantity of raw materials, packaging materials, equipment, and manpower for production. • Demonstrate capacity utilization of machinery with respect to the processing time, production order, and batch size for each product. • Perform cleaning and maintain the work area as per organizational procedures. • Perform cleaning and maintain the machines and tools and sanitize them as per the organization's specifications and standards. • Show disposal of the waste material at designated place safely. • Display the tools, equipment, and machinery to ascertain suitability for use. • Conduct role play to report information such as faulty tools and equipment to the concerned authority.
Classroom Aids	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	

cleaning machines, extruder, vegetable washer, vegetable peeler, pulveriser, fryer, roaster, blender, strainer, canning machineries blender, Measurement Cane; Weighing balance, Timer, Gas with Burner; Knives, spatulas, packing wrap rolls, measuring cup and spoons, utensils, ladle, ladle with holes, digital hygrometer, Muslin Cloth; Weighing Machine; Milk Stirrer; Thermometer; Test Tube (Glass); Test Tube Holder; Gas with Burner;

Module 3: Wash and Sort the Fruits for Processing

Mapped to FIC/N0122 v 2.0

Terminal Outcomes:

- Discuss the procedure to wash the fruits for fruit pulp processing
- Perform the tasks to inspect the washed fruits manually and sort them for fruit pulp processing

Duration: 08:00	Duration: 16:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the significance and procedure of receiving and checking fruits from supplier or vendor for quality and quantity • List the physical quality parameters of the fruits such as appearance, colour, texture, maturity, etc. • Discuss the methods to monitor temperature of fruits to be cooled to the required temperature • Elaborate on the standard operating procedure of a ladder conveyor • Explain the Standard Operating Procedure (SOP) to wash fruits to start the process • Discuss the visual inspection procedure for manually washed fruits 	<ul style="list-style-type: none"> • Dramatize a situation on how to receive fruits from the supplier or vendor for quality and quantity • Demonstrate how to check fruits received from supplier or vendor for quality and quantity • Apply appropriate practices to remove dirt, soil, dust, and unwanted sticky material, etc. by dumping fruits into the washing tank • Show how to use transfer fruits from the washing tank to the washing line conveyor using the ladder conveyor • Demonstrate how to rinse fruits with a high-pressure spraying system • Apply appropriate methods to visually inspect the washed fruits and removing damaged, blemished, and rotten ones manually
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Washing tank, Washing line conveyor, High-pressure spray, etc.	

Module 4: Peel, De-seed and Destone the Fruits

Mapped to FIC/N0122 v 2.0

Terminal Outcomes:

- Perform the process to peel, de-seed, and cut the sorted fruits
- Describe the ways to dispose of the peeling material or core of the fruits

Duration: 08:00	Duration: 16:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Elaborate on the standard operating procedure of chopper/cutter/slicer machine • Explain the process of peeling or core removal of the fruits • State the significance ensuring the removal of peel or core appropriately by monitoring the fruits emerging from the peeling or coring process • Discuss the SOP to cut fruits manually and dispose of the waste 	<ul style="list-style-type: none"> • Demonstrate the steps to remove the peel or core of the sorted fruits using the peeler or corer (depending on the type of fruits) • Show how to wash peeled fruits using pump water or open spraying system • Apply appropriate practices to either dispose of or process the peeled material or core further separately as per standards • Demonstrate how to cut fruits manually in required size or loading them in the chopper, cutter or slicer machine • Show how to cut the fruit tip or peel the fruit manually
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Peeler, Corer, Open spray system, Chopper, Slicer machine, Cutter, etc.	

Module 5: Fruit Pulp Extraction and Pre-cooking of the Pulp

Mapped to FIC/N0122 v 2.0

Terminal Outcomes:

- Discuss the tasks to be performed to extract the fruit pulp
- Perform the activities to pre-cook the extracted fruit pulp

Duration: 12:00	Duration: 22:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the fruit pulp extraction process • State the importance of ensuring that collected pulp is free from seeds and fiber • Discuss the methods to examine pre-cooked fruits pulp • Explain the control parameters (Pressure, temperature, cooking time, stirrer speed, etc.) of cooking tank as per standards • Discuss the standard procedure to replace damaged or clogged filter screen of pulper cum finisher/pulper refiner machine • Describe the procedure to transfer the sample of the pulp to the quality lab as per standards 	<ul style="list-style-type: none"> • Apply appropriate procedure to extract the fruit pulp using various machinery • Employ appropriate practices to collect the refined pulp in the collection tank • Demonstrate how to replace damaged or clogged filter screen of pulper cum finisher or pulper refiner machine • Demonstrate how to pre-cook the pulp by transferring pulp to steam jacketed kettle or pre-cooking tank, checking pumped quantity and setting the control parameters like pressure, temperature, cooking time, stirrer speed, etc. • Demonstrate how to examine pre-cooked fruits pulp through feel or texture • Show how to operate refractometer to measure the brix • Apply appropriate practices to collect the pre-cooked pulp in the collection or holding tank • Employ appropriate practices to collect and transfer the samples of pulp to the quality lab for analysis (such as brix, pH, titratable acidity, etc.) • Demonstrate the procedure to de-aerate and concentrate the fruit pulp
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Collection tank, Steam jacketed kettle or Pre-cooking tank, De-aeration tank, Evaporator, etc.	

Module 6: Aseptic Sterilization and Packing of Fruit Pulp

Mapped to FIC/N0122 v 2.0

Terminal Outcomes:

- Discuss the procedure of aseptic sterilization of the fruit pulp
- Perform the activities to pack and send the fruit pulp to the storage area

Duration: 08:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the control parameters (such as Temperature, pressure, time, etc.) of the sterilizer to be maintained for sterilizing the fruit pulp • Discuss the operating procedure of aseptic packaging machineries, aseptic packaging process and relevant parameters • Describe the procedure to monitor and maintain steam pressure • State the significance of maintaining the temperature of the product surge tank until the marked filling level • Explain the SOP for sending the filled aseptic bags to the storage area, and storing raw materials, and packaging material 	<ul style="list-style-type: none"> • Demonstrate the procedure to sterilize the pre-cooked, de-aerated and concentrated pulp by transferring the pulp into sterilization tank and adjusting the controls of the tank like temperature, pressure, time etc. • Apply appropriate procedure to monitor and maintain steam pressure by adjusting gauges to sterilize fruit pulp as per standards • Show how to place plastic liners in the container such as drums, cartons, etc. = • Demonstrate how to check the labelling details (like, Date of manufacture, date of expiry, batch code etc.) on the packaging material and place it inside the liner for filling pulp • Demonstrate how to fix spout of aseptic bag to the filling nozzle of the machine • Show how to fill hot sterile product into the aseptic bag and seal or close it with sterile closures while setting controls like pressure, temperature, filling volume etc. • Apply appropriate practices to check for the required weight of the container and label the container along with the details, such as, batch number, date of manufacture, date of expiry, volume/weight, etc. • Employ appropriate practices to transfer filled aseptic bags into the storage area and store them by maintaining storage conditions as per standards
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Sterilization tank, Product surge tank, Plastic liners, Drums, Cartons, Aseptic bag, etc.	

Module 7: Can the Fruit Pulp

Mapped to FIC/N0122 v 2.0

Terminal Outcomes:

- Discuss the procedure to can the fruit pulp
- Perform the tasks to report the discrepancy, if any

Duration: 08:00	Duration: 18:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the operating procedure of canning machinery • Discuss the canning process of the fruit pulp and the parameters to be considered for the process • Describe the procedure to fill pulp into the cans • Discuss the SOP on storing finished goods • Outline the scope of various standards as well as FSSAI laws and regulations on product, packaging, and labelling • Discuss the procedure to place a lid over the filled cans with a sealing machine or manually • State the importance of taking the canned fruit pulp samples for quality lab for analysis • Discuss various types of packaging materials, and packaging machinery for fruit pulp • Discuss standard quality parameters, basic food microbiology and quality assessment of the fruit pulp based on physical parameters 	<ul style="list-style-type: none"> • Demonstrate operating procedure of can reformer, flanger, seamer, can body beader, and embossing machines to form cans • Apply appropriate practices raise stacked cans and transferring them to mechanical conveyor using machine-lift • Employ appropriate observation method to remove defective/damaged cans from the conveyor and discard them as per the standards • Show how to feed the empty cans to conveyors for washing, filling, and sealing machines • Demonstrate the procedure to sterilize, collect, and transfer the cans to the filling machine and also to place them on the conveyor • Show how to transfer pre-cooked/pre-heated pulp into the filling tank and set control parameter, such as temperature, volume, agitator etc. • Show how to transfer the filled can to the can sealing machine and load the canned product manually in metal baskets • Demonstrate how to sterilize process of the can at a specified temperature for specified time and cool the cans in cold water tank by operating the valves to circulate cold water in tanks and manually dry the cans or by adjusting the controls of dryer • Apply appropriate practices to inspect the cans for leakage and remove the leaked cans from the water tank for further re-use or discarding as per standards

	<ul style="list-style-type: none"> • Apply appropriate practices to transfer the filled and cooled cans to the packaging machine • Apply appropriate practices to take samples of canned products and sending them to the quality lab for analysis • Show how to pack the labeled cans into cartons and transfer to the storage area and store them as per standard storage conditions • Dramatize a situation on how to inform the supervisor on discrepancies or concerns for immediate action
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Reformer, Flanger, Seamer, Can body beader, and Embossing machines, Machine-lift, Mechanical conveyor, Packaging machine, etc.	

Module 8: Ensuring food safety and personal hygiene

Mapped to FIC/N9901 v 1.0

Terminal Outcomes:

- Explain the ways to ensure food safety and personal hygiene at the workplace
- Demonstrate the steps to be followed for implementing good hygiene and manufacturing practices

Duration: 04:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Define hazards and risks. • Recall the various types of health and safety equipment available in an organisation and the methods for obtaining them. • Discuss the organisational health and safety policies and procedures. • Discuss the relevant health and safety standards to be followed in the job as listed in 'The Food Safety and Standards Act, 2006'. • Explain the importance of wearing appropriate personal protective equipment (such as eye protection, hard hats, gloves apron, rubber boots, etc.) and ensuring personal hygiene at the workplace. • Elucidate the ways to prevent product contamination and cross contamination at the workplace. • Discuss the ways to handle items that can lead to allergic reactions in a retail environment. • State the importance of preventive health check-ups for ensuring personal hygiene. • State the importance of storing food at specified temperature. • Discuss the importance of sanitising self and the work area safely and appropriately. • Recall the ways to store the sanitising materials appropriately. 	<ul style="list-style-type: none"> • Employ appropriate techniques to prevent product contamination and cross contamination. • Demonstrate the steps to be performed for implementing good manufacturing practices (GMP) in a retail environment. • Show how to treat injuries such as cuts, boils, skin infections and grazes appropriately. • Apply suitable methods for disinfecting the work area and equipment thoroughly. • Demonstrate how to wash hands and use alcohol-based sanitisers appropriately. • Show how to wear personal protective equipment such as gloves, hairnets, masks, ear plugs, goggles, shoes etc. properly ensuring adequate protection. • Prepare a sample report consisting of information such as illness to self and others as per organisational practice. • Roleplay a situation on how to communicate with the supervisor for reporting illness of self and others.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	

Tools, Equipment and Other Requirements

Gloves, hair net, shoe cover, soap dispenser, hand sanitizer, ear plugs, masks, aprons/lab coats eye protection, hard hats, gloves, rubber boots, etc.

Module 9: Managing accidents and emergencies

Mapped to FIC/N9901, v 1.0

Terminal Outcomes:

- List the various types of accidents and emergencies that can arise at the workplace and the ways to address them
- Demonstrate the steps to be followed to implement emergency and evacuation procedures effectively

Duration: 04:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the various types of health and safety hazards present in the environment. • Discuss the possible causes of risk, hazard or accident at the workplace. • Elucidate the standard practices and precautions used to control and prevent risks, hazards and accidents at the workplace. • Discuss the dangers associated with the use of electrical and other equipment. • State the importance of using protective equipment and clothing for specific tasks and work conditions. • Discuss the role of organisational protocols in preventing accidents and hazards. • Recall the preventive and remedial actions to be taken in the case of exposure to toxic materials at the workplace. • Discuss the various causes of fire and ways to prevent them. • Elaborate the steps to use different types of fire extinguishers. • Explain the procedure to provide artificial respiration and cardio-pulmonary resuscitation (CPR) to the affected. • Summarise the rescue techniques to be followed at times of fire hazard. • Discuss the significance of various types of hazard and safety signs. • Discuss the workplace emergency and evacuation procedures. • Elaborate the type of first-aid treatment to be offered at times of shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries, etc. 	<ul style="list-style-type: none"> • Apply appropriate techniques to deal with hazards safely and appropriately. • Demonstrate the use of various types of fire extinguishers effectively. • Demonstrate appropriate ways to respond to an accident situation or medical emergency promptly and appropriately. • Demonstrate the steps to be followed for providing artificial respiration and cardio-pulmonary resuscitation (CPR) in various instances (e.g. cardiac arrest). • Perform the steps to be followed during emergency and evacuation procedure. • Demonstrate the procedure of freeing a person from electrocution. • Show how to administer appropriate first aid to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning etc.

- Discuss about the potential injuries and ill health conditions that are caused due to incorrect manual handling practices.
- List the precautions to be taken while lifting and carrying materials in a food retail environment.

Classroom Aids:

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

Tools, Equipment and Other Requirements

Helmet, gloves, rubber mat, ladder, neon tester, leather or asbestos gloves, flame proof aprons, flame proof overalls buttoned to neck, cuff less (without folds) trousers, reinforced footwear, helmets/hard hats, cap and shoulder covers, ear defenders/plugs, safety boots, knee pads, particle masks, glasses/goggles/visors, hand and face shields, machine guards, residual current Devices, shields, dust sheets, respirator.

Module 10: Working Effectively in an Organization

Mapped to FIC/N9902 v 1.0

Terminal Outcomes:

- State the importance of proper communication and teamwork at the workplace
- Roleplay a situation to communicate with others effectively

Duration: 08:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the applicable organisational quality procedures and processes for working effectively in a team • Elucidate the legislations, standards, policies, and procedures followed in the organization relevant to employment, behaviour, harassment, discrimination, and performance conditions • State the importance of well-defined reporting structure in an organisation. List the various types of inter-dependent functions applicable in the job • Discuss the different types of harassment and discrimination based on gender, disability, caste, religion, and culture • List the key factors that aid in prioritising tasks • Discuss the components of effective communication and its importance at the workplace • State the impact of poor communication on the employee, the employer, and the customer • State the importance of teamwork in organizational and individual success. • Discuss the importance of ethics and discipline for professional success • Explain the ways to address grievances appropriately and effectively • Discuss the importance of managing interpersonal conflicts effectively and ways to do so • List the different types of disabilities and the challenges faced by persons with disability (PwD) 	<ul style="list-style-type: none"> • Roleplay a situation on how to obtain information, seek clarifications, reciprocate understanding and provide information accurately and clearly • Roleplay a situation on how to use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive while interacting with others • Show how to consult and assist others to maximize effectiveness and efficiency at work • Dramatize a situation to show how to escalate problems and grievances beyond own scope to the concerned authority • Roleplay a situation on how to take appropriate action to resolve conflicts at the workplace • Roleplay a situation on how to report incidents of harassment and discrimination to appropriate authority

<ul style="list-style-type: none"> • Discuss the applicable laws, acts and provisions defined for PwD by the statutory bodies • State the importance of gender sensitivity and equality • Discuss the applicable legislations, grievance redressal mechanisms, and penalties against harassment at the workplace • State the importance of transacting with others without personal bias 	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Nil	

Module 11: Material Conservation

Mapped to SGJ/N1702 v 1.0

Terminal Outcomes:

- Discuss optimal usage of material including water in various tasks/activities/processes

Duration: 04:00		Duration: 08:00	
Theory – Key Learning Outcomes		Practical – Key Learning Outcomes	
<ul style="list-style-type: none">• List the types of hazards, risks and threats associated with handling different materials• Discuss the role of workstation layout, electrical and thermal equipment used in the material conservation• Discuss organisational procedures for minimising waste• Elucidate practices of efficient and inefficient management and utilization of material and water at the workplace• Discuss the ways to manage material and water usage at work effectively		<ul style="list-style-type: none">• Show how to check for spills and leakages in various materials applicable in the job• Demonstrate how to plug the spills and leakages appropriately• Roleplay a situation on how to escalate any issues related to repair of spills and leakages to the concerned authority effectively• Demonstrate the standard practices to be followed for cleaning tools, machines and equipment effectively	
Classroom Aids:			
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook			
Tools, Equipment and Other Requirements			
Materials and tools and equipment used at work			

Module 12: Energy/Electricity Conservation

Mapped to SGJ/N1702 v 1.0

Terminal Outcomes:

- Discuss optimal usage of energy/electricity

Duration: 04:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Define electricity • Discuss the basics of electricity • List the energy efficient devices that are used in the job • Discuss the ways to identify electrical problems that can arise during work • Discuss the standard practices to be followed for conserving electricity in the job • State the impact of improperly connected electrical equipment and appliances on the tasks being performed 	<ul style="list-style-type: none"> • Apply suitable techniques to check the equipment/machinery for desired level of functioning • Employ appropriate methods to rectify faulty equipment/machinery safely • Roleplay a situation on how to report equipment faults and maintenance lapses to the concerned personnel effectively
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Energy saving devices	

Module 13: Waste Management/Recycling

Mapped to SGJ/N1702 v 1.0

Terminal Outcomes:

- Discuss the importance of minimal waste generation
- Demonstrate how to dispose waste as per industry approved standards

Duration: 04:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the various types of recyclable, non-recyclable, and hazardous waste • State the significance of different coloured dustbins • List the different types of waste to be segregated • State the importance of waste management • Discuss the standard methods for waste disposal • List the sources of pollution. • Discuss the ways to minimise various types of pollution 	<ul style="list-style-type: none"> • Demonstrate the standard practices to be followed for segregating waste into respective categories • Show how to dispose non-recyclable waste appropriately and safely • Demonstrate the standard practice for depositing recyclable and reusable materials at designated place • Show how to dispose hazardous waste safely and appropriately
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Non-recyclable, recyclable waste bins	

Module 14: Employability and Entrepreneurship skills

Bridge Module

Terminal Outcomes:

- Describe the traits of individual at workplace
- Demonstrate apply employability and entrepreneurship skills at workplace

Duration: 28:00	Duration: 12:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss own strengths and weaknesses and analyse the gaps to ensure continuous improvement. • Discuss the measures to be undertaken to utilise time effectively thereby achieving maximum productivity. • List the characteristics of innovative individuals • List the levels of Maslow Hierarchy of needs • List the traits of effective team • Discuss tips for stress management • Discuss the importance of good work ethics • Discuss how to manage an enterprise • Describe how to plan effective strategies for solving problems and improving work culture within the team. • List the various types of digital marketing techniques. • Discuss the types and importance of e-commerce in promoting businesses. • List the various types of online banking services being used widely. • Discuss the procedure to apply for bank finances • List the elements of a proposal to attract future business opportunities and prospective clients. • Explain how to conduct entrepreneurial programs to identify business opportunities, generate employment and increase clientele. • Understand the make in India campaign • Discuss the importance of Swachh Bharat Abhiyan • Understand the importance of entrepreneurship • Describe the traits of successful entrepreneur 	<ul style="list-style-type: none"> • Show how to analyse a situation to identify gaps for improving the work process. • Demonstrate the procedure to plan the time taken to perform various tasks effectively. • Describe how market research is carried out • Role play the characteristics of an effective entrepreneur and leader • Demonstrate on how to identify new business opportunities • Prepare a sample plan to solve problems and improve productivity at the workplace. • Demonstrate the procedure to operate a computer for digital marketing, e-commerce, branding, etc. • Show how to use services such as NEFT, IMPS, UPI, RTGS for online banking.

- List the types of enterprises
- Understand the importance of effective speaking and listening
- Discuss the importance of problem solving
- Discuss how to deal with failures
- Describe the core keys of marketing
- Discuss ways to manage risks at workplace

Classroom Aids:

White board/Chart papers, marker.

Tools, Equipment and Other Requirements

NIL

Module 15: Extraction of Fruit Juice for making squash

Mapped to FIC/N0103 v 2.0

Terminal Outcomes:

- Perform the tasks to extract the fruit juice for producing the squash and juices
- Discuss the procedures followed to extract fruit juice for making squash

Duration: 10:00	Duration: 18:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • State the significance and procedure of interpreting and analysing the process chart, product flow chart, and formulation chart for the production process • Discuss the fruit juice extraction process • Explain the standard procedure to dispose of the waste produced while extracting the juice • Describe the physical parameters (such as appearance, colour, consistency, flavour, taste, etc.) for checking the quality of extracted juice Discuss the standard procedure to take and send the samples of the extracted fruit juice to quality lab for analysis 	<ul style="list-style-type: none"> • Apply appropriate visual inspection method to remove the damaged fruits before producing the juices • Demonstrate how to grind the fruits (like apple or pear), collect sliced or grated fruits and extract the fruit juice from the fruit extractor • Show how to collect juice flowing through the discharge outlet in collection tank, and remove peel and seeds simultaneously • Apply appropriate practices to measure required enzymes for each batch as per the formulation chart and perform the enzyme activity on the cut/grated fruits as per standards • Show how to operate pressing machine to press the enzyme treated fruits • Demonstrate how to transfer fruit juice to filter and collect it in the collection tank • Apply appropriate methods to check the quality of extracted juice through physical parameters like appearance, color, consistency, flavour, taste etc • Show how to take samples of extracted juice and send them to the Quality lab for analysis • Apply appropriate procedure to concentrate fruit juice and recover the aroma (aroma stripping)
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Juice extractor, Collection tank, Required enzymes, Raw material (various fruits)	

Module 16: Pasteurization and Clarification of the Extracted Juice

Mapped to FIC/N0103 v 2.0

Terminal Outcomes:

- Perform the tasks to pasteurize and clarify the extracted juice
- Discuss the process of pasteurization and clarification of extracted juice

Duration: 08:00	Duration: 16:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • State the significance of ensuring pasteurization of the cloudy juice immediately after pressing • Discuss the pasteurization process of the extracted juice • State the importance of ensuring the uniform mixing of enzymes during the clarification process • State the significance of pasteurizing and clarifying the juice • Elaborate on basic food microbiology and quality assessment based on physical parameters 	<ul style="list-style-type: none"> • Demonstrate how to monitor the process parameters of the pasteurizer like pressure, temperature, flow rate, time, etc. • Demonstrate the procedure of heating up raw incoming juice by allowing the pasteurized juice to pass through heat exchangers • Employ appropriate practices to circulate water through heat exchangers to cool pasteurized juice, etc.) • Apply appropriate practices to measure required enzymes as per formulation chart and add them to pasteurized juice in the collection tank to obtain clear juice. • Employ appropriate practices to remove smallest particles and obtain clear juice by allowing the enzyme treated juice to pass through ultra-filtration unit • Show how to check the quality of juice through physical parameters like colour, appearance, flavour, taste, etc. • Apply appropriate practices to take and send the samples from the production line to the lab for quality analysis such as pH, acidity, etc. as per standards • Show how to fill up processed juice into the holding/reservoir tanks and store them as per standard storage practices for further processing or packaging
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Pasteurizer, Ultra-filtration unit, Collection tank, Required enzymes, Raw material (various fruits)	

Module 17: Prepare the Squash

Mapped to FIC/N0103 v 2.0

Terminal Outcomes:

- Perform the tasks to produce the squash
- Describe the methods required to prepare squash

Duration: 08:00	Duration: 16:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the usage of refractometer in the squash preparing process • Describe the procedure to measure the quantity of acids, preservatives, color, flavor, etc. to be mixed in a blending tank • State the importance of observing the mixing process and collecting a sample, and check physical parameters to ensure uniform mixing of the fruit juice • Describe the control parameters of pasteurizer or heat exchanger • Discuss the procedure to prepare and clarify fruit juice squash 	<ul style="list-style-type: none"> • Show how to prepare sugar syrup by measuring the sugar and water as defined in the formulation and adding acids, if specified in the formulation • Apply appropriate practices to mix the ingredients by turning on the mixer/agitator after adding sugar syrup into the kettle/tank ,and heat the solution by admitting steam into the kettle/tank • Demonstrate how to use the refractometer to check specifications of the sugar syrup brix • Demonstrate the steps of filtration process of the sugar syrup to remove undesirable particles and collecting filtered sugar syrup in storage/ holding tanks • Show how to perform the blending and mixing process of the juice concentrate or clarified juice • Apply appropriate practices to transfer the blended product into the pasteurizer/heat exchanger after setting the controls like temperature, pressure, etc. and control the process parameters to cool the product • Demonstrate how to collect the finished product in the storage tank and check the quality of the same through physical parameters like appearance, color, consistency, flavor, taste etc. • Show how to take samples of the final product for quality testing in the lab
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Raw material (like sugar, water, etc.), Kettle, Collection tank, etc.	

Module 18: Fill, Pack and Store Juice and Squash

Mapped to FIC/N0103 v 2.0

Terminal Outcomes:

- Perform the tasks to fill, pack and store the juice and squash
- Describe the reporting procedure regarding the discrepancy

Duration: 06:00	Duration: 16:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the procedure to transfer the finished product into the filling tank • Elaborate the SOP to wash bottle/plastic containers to fill measured quantity of finished products • List the control parameters of the packaging machine, like filling volume, batch code details, date of manufacture, best before date, etc. 	<ul style="list-style-type: none"> • Apply appropriate practices to load the packing materials like tetra packs, glass bottles, plastic containers, etc., sealing material like caps, lids, crowns, etc. and labels in the packaging, sealing and labelling machines respectively • Demonstrate how to fill bottle/plastic containers with the measured quantity of finished products and close/seal, label and check the weight of packed product periodically as per standards • Show how to place packed and labelled products in cartons and transfer to the storage area as per standards • Roleplay on how to report discrepancies/concerns to department supervisor for immediate action
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Packaging material and machine, labelling material and machine, Sealing machine, etc.	

Module 19: Perform Post-Production Cleaning and Regular Maintenance of Equipment

Mapped to FIC/N0103 v 2.0

Terminal Outcomes:

- Describe the post-production cleaning activities of required tools and equipment
- Perform the tasks to maintain the tools and equipment regularly

Duration: 04:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the appropriate cleaning agents and sanitizers to clean the work area, machinery, tools, and equipment after squash production • Discuss the standard procedure and importance of cleaning and maintenance of all machines and equipment 	<ul style="list-style-type: none"> • Demonstrate how to clean the work area, machinery, equipment, and tools using approved cleaning agents and sanitizers • Show how to repair minor faults of all machines used in squash production
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Various cleaning agents and sanitizers, Different machineries, tools, equipment, etc.	

Module 20: Prepare Jam and Jelly

Mapped to FIC/N0111 v 2.0

Terminal Outcomes:

- Perform the tasks to prepare jam and jelly
- Discuss the process of preparing jam and jelly

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Elaborate on the operating procedure of cooking kettle or tank • State the significance of stirring the pulp continuously during the heating process • State the importance of achieving specified pressure and temperature while cooking the fruit pulp or fruit juice • Discuss the procedure and significance to check the quality of cooked product through physical parameters such as colour, appearance, texture, taste, etc. and to send the sample finished product for quality lab analysis • Explain the procedure to transfer the finished product to the filling tank 	<ul style="list-style-type: none"> • Apply appropriate practices to measure and transfer appropriate quantity of fruit pulp or juice from the holding tank or container into cooking kettle or tank • Show how to monitor pressure and control gauge and adjust controls to achieve specified pressure and temperature to cook fruit pulp/juice • Demonstrate how to transfer a measured quantity of water into pre-mixing tank and specified amount of pectin/gelatin to prepare pectin/gelatin solution • Apply appropriate method to measure and add ingredients into pulp/juice in the kettle/tank for batch preparation as per the formulation chart • Show how to perform cooking activities by operating the cooker, setting the controls of cooker such as, temperature, pressure, etc., ensuring complete cooking using refractometer and checking the quality of the cooked product through physical parameters like color, appearance, texture, taste etc. • Employ suitable practices to transfer the heated product manually or automatically into hopper of the bottled Jam/jelly packaging and filling/moulding machine of jelly making, as required • Show how to monitor the moulding process adjust the controls, as required and inspect the jellies for shapes, sizes and weights etc. • Apply appropriate methods to adjust the speed of cooling conveyor and fans to cool the moulded jellies

	<ul style="list-style-type: none"> • Show how to inspect jellies, transfer the good jellies to the packaging machine either automatically or manually and re-use the defective jellies as rework in specified quantity and heat with the pulp
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Required tools and machinery, Raw materials such as fruits, sugar, pectin , citric acid, food colours, preservatives etc.	

Module 21: Prepare the Ketchup

Mapped to FIC/ N0111 v 2.0

Terminal Outcomes:

- Perform the tasks to prepare ketchup
- Explain the procedure of preparing ketchup

Duration: 08:00	Duration: 16:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the ingredients used in preparing ketchup such as sugar, salt, spice powder, vinegar, etc. • Elaborate the procedure to prepare ketchup from the fruit pulp • Explain the method to test the viscosity of the ketchup using viscometer 	<ul style="list-style-type: none"> • Apply appropriate practices to measure and transfer appropriate quantity of tomato pulp/puree from holding tank/ container to cooking kettle • Employ appropriate practices to heat the tomato paste until it reaches the required temperature and thickness • Show how to measure required ingredients such as sugar, salt, spice powder, vinegar, etc. and adding them to the tomato pulp/puree in kettle as per sequence • Demonstrate how to transfer the pre-cooked material at a specific brix and temperature into the cooker after observing and checking the quality of pre-cooked food through feel, consistency, refractometer, color, etc. • Apply appropriate practices to observe the cooking process and check completeness of cooking process using refractometer • Show how to send the sample of the final product for lab testing as well as checking the quality of the final product through physical parameters like colour, appearance, texture, taste etc. • Show how to transfer the finished product into filling tank/hopper of the packaging machine or manually filling hot product in packaging containers
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Required tools and machinery, Raw materials, etc.	

Module 22: Fill and Pack Jam, Jelly, and Ketchup

Mapped to FIC/N0111 v 2.0

Terminal Outcomes:

- Perform the tasks to fill, pack and store the jam, jelly and ketchup
- Describe the reporting procedure regarding any discrepancy in the packing of jam, jelly and ketchup

Duration: 08:00	Duration: 16:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the procedure to load and operate the packaging machine • State the importance of setting packaging machine for filling volume, speed, size, etc. • Elaborate the standard procedure to wash bottle/plastic containers to fill measured quantity of finished products • State the significance of spraying water on containers to cool and set product (setting in case of jam and jelly) or arrange filled jam/jelly containers in rack for a specified time as per the standards • Elaborate the standard procedure to load labels in labelling machine • Discuss the procedure to set date coding machine for batch number, date of manufacture, date of expiry, etc. 	<ul style="list-style-type: none"> • Apply appropriate practices to transfer the prepared product (heated jam or jelly or moulded jelly or heated ketchup into the packaging machine by operating the valves • Apply appropriate practices to load the packing materials (glass bottle, plastic bottle, pouches, laminates, Jars, etc.) and sealing materials (lid, closures, etc.) on packaging machines and set the machine for filling volume, speed, size etc. • Demonstrate how to operate automatic packaging machine for forming, washing bottles, filling, sealing container (or) fill measured quantity of hot product in packaging containers, place lid and close manually or mechanically • Show how to start machine to fill hot products or jellies in the container or jars or laminates or bottles and check the weight of packed products periodically to ensure its conformance to standards • Demonstrate the procedure to cool and set the product or arrange filled jam/jelly containers as per SOP • Apply appropriate practices to dry the cooled bottles by allowing the cooled bottles to pass through the drying tunnel and setting controls (air temperature, air flow rate, etc.) of air dryer before labelling • Show how to load labels in labelling machine, set date, batch coding, date of manufacture, best before date, etc.

	<ul style="list-style-type: none"> • Employ appropriate practices to place the packed and labelled products in cartons and transfer to storage area maintaining storage conditions as per standards • Dramatize a situation on how to report discrepancies/concerns to the department supervisor for immediate action
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Required tools and machinery, Packaging materials, etc.	

Module 23: Post Production Cleaning and Regular Maintenance

Mapped to FIC/N0111 v 2.0

Terminal Outcomes:

- Describe the post-production cleaning activities of tools and equipment required
- Perform the tasks to maintain the tools and equipment regularly

Duration: 04:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the appropriate cleaning agents and sanitizers to clean the work area, machinery, tools, and equipment after jam, jelly, ketchup production and their uses • Discuss the standard procedure and importance of cleaning and maintenance of all machines and equipment 	<ul style="list-style-type: none"> • Demonstrate how to clean the work area, machinery, equipment, and tools using approved cleaning agents and sanitizers • Show how to repair minor faults of all machines used for the production of jam, jelly and ketchup • Apply appropriate practices of ensuring standard maintenance activities of all machines and equipment at the workplace
Classroom Aids:	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Various cleaning agents and sanitizers, Different machineries, tools, equipment, etc.	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
B.Sc or graduate/B.Tech/BE	Food technology or food engineering	3	Food processing	1	Food processing	
M.Sc/M.Tech/ME	Food technology or food engineering	2	Food processing	1	Food processing	
Diploma /certificate course	(Food Technology / Food Engineering /packaging/Home science,or allied sector	4	Food processing	1	Food processing	

Trainer Certification	
Domain Certification	Platform Certification
"Fruit Pulp Processing Technician", "FIC/Q0106, V3.0", Minimum accepted score is 80%	"Trainer", "MEP/Q2601, V1.0" with a scoring of minimum 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
M.Sc/M.Tech/ME	Food technology or food engineering	2	Food processing	1	Food processing	
B.Sc or graduate/B.Tech/BE	Food technology/ Home Science	3	Food processing	2	Food processing	
Diploma	Hotel management/ Food Science/ Home Science	4	Food processing	2	Food processing	

Assessor Certification	
Domain Certification	Platform Certification
"Fruit Pulp Processing Technician", "FIC/Q0106, V3.0", Minimum accepted score is 80%	"Trainer", "MEP/Q2601, V1.0" 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.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDSM/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records
- If the batch size is more than 30, then there should be 2 Assessors.

2. Testing Environment: Assessor must:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME should be verified by the other subject Matter Experts along with the approval required from THSC
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 is for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:

- Surprise visit to the assessment location

- Random audit of the batch
 - Random audit of any candidate
6. Method for assessment documentation, archiving, and access
- Hard copies of the documents are stored
 - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage and are stored in the Hard Drives

References

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
FSSAI	Food Safety and Standards Authority of India
GMP	Good Manufacturing Practices
GHP	Good Hygiene Practices
CPR	Cardiopulmonary Resuscitation