



# Model Curriculum

**QP Name: Assistant Technician – Cold Storage**

**QP Code: FIC/ Q7004**

**Version: 4.0**

**NSQF Level: 3.0**

**Model Curriculum Version: 4.0**

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## Training Parameters

<b>Sector</b>	Food Processing
<b>Sub-Sector</b>	Multi-Sectorial
<b>Occupation</b>	Refrigeration
<b>Country</b>	India
<b>NSQF Level</b>	3
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/7127.0100
<b>Minimum Educational Qualification and Experience</b>	Grade 10 OR 8th-grade pass with 3-year experience in food processing OR Previous relevant Qualification of NSQF Level 2.0 with 3-year experience in food processing OR Previous relevant qualification of NSQF Level 2.5 with 1.5-year experience in food processing
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	16 Years
<b>Last Reviewed On</b>	22-10-2024
<b>Next Review Date</b>	21-10-2027
<b>NSQC Approval Date</b>	22-10-2024
<b>QP Version</b>	4.0
<b>Model Curriculum Creation Date</b>	30-08-2024
<b>Model Curriculum Valid Up to Date</b>	22-10-2027
<b>Model Curriculum Version</b>	4.0
<b>Minimum Duration of the Course</b>	300 Hours
<b>Maximum Duration of the Course</b>	300 Hours

## Program Overview

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

### Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Discuss the process of preparing the work area for cold storage operations, ensuring compliance with organizational standards.
- Explain how to handle cold storage system components and maintain them according to specifications and organizational standards.
- Describe the procedure for storing food in the cold storage room/chamber while maintaining storage parameters as per organizational standards.
- Discuss the basic health and safety practices to be followed at a food processing workplace.
- Discuss the Employability and Entrepreneurship Skills.

### Compulsory Modules

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

NOS and Module Details	Theory Duration (Hours)	Practical Duration (Hours)	On-the-Job Training Duration (Mandatory) (Hours)	On-the-Job Training Duration (Recommended) (Hours)	Total Duration (Hours)
<b>FIC/N7010: Prepare for the cold storage operations</b> <b>NOS Version No.: 2.0</b> <b>NSQF Level: 3.0</b>	20:00	40:00	30:00	00:00	90:00
Module 1: Introduction to the sector and the job role of an Assistant Technician – Cold Storage	05:00	00:00	00:00	00:00	05:00
Module 2: Prepare the Work Area and Cold Storage Equipment	15:00	40:00	30:00	00:00	85:00
<b>FIC/N7011: Handle cold storage facility for storing food</b> <b>NOS Version No.: 2.0</b> <b>NSQF Level: 3.0</b>	30:00	90:00	30:00	00:00	150:00
Module 3: Handle Cold Storage Facility for Storing Food	15:00	45:00	15:00	00:00	75:00
Module 4: Repair and Maintenance of Cold Storage System	15:00	45:00	15:00	00:00	75:00

<b>FIC/N9906: Apply food safety guidelines in Food Processing</b> <b>NOS Version No.: 1.0</b> <b>NSQF Level: 3</b>	<b>10:00</b>	<b>20:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 5: Implement Personal Hygiene and Good Manufacturing Practices	05:00	10:00	00:00	00:00	15:00
Module 6: Apply Food Safety Practices at Workplace	05:00	10:00	00:00	00:00	15:00
<b>DGT/VSQ/N0101: Employability Skills (30 Hours)</b> <b>NOS Version No.: 1.0</b> <b>NSQF Level: 2</b>	<b>30:00</b>	<b>00:00</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>
Module 7: Employability Skills (30 Hours)	30:00	00:00	00:00	00:00	30:00
<b>Total Duration</b>	<b>90:00</b>	<b>150:00</b>	<b>60:00</b>	<b>00:00</b>	<b>300:00</b>

## Module Details

### Module 1: Introduction to the sector and the job role of an Assistant Technician – Cold Storage

*Mapped to FIC/N7010, v2.0*

#### Terminal Outcomes:

- Explain the importance of Food Processing Industry.
- Discuss the roles and responsibilities of an Assistant Technician – Cold Storage.

<b>Duration (in hours): 05:00</b>	<b>Duration (in hours): 00:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Define food processing.</li> <li>• Describe the various sub-sectors of food processing industry.</li> <li>• Discuss the scope of employment in the food processing industry.</li> <li>• Describe the roles &amp; responsibilities of an Assistant Technician – Cold Storage.</li> <li>• List the various units within a cold storage plant.</li> </ul>	
<b>Classroom Aids</b>	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
<b>Tools, Equipment and Other Requirements</b>	
Nil	

## Module 2: Prepare the Work Area and Cold Storage Equipment

*Mapped to FIC/N7010, v2.0*

### Terminal Outcomes:

- Explain the steps involved in preparing the work area and cold storage equipment to ensure safety and efficiency.
- Discuss the process of preparing cold storage equipment before use to optimize its performance and ensure operational readiness.

Duration (in hours): 15:00	Duration (in hours): 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe the functions of the components of cold storage systems, such as compressors, condensers, evaporators, and expansion valves.</li> <li>• Explain the refrigeration cycle used in cold storage and how it operates.</li> <li>• Discuss the lockout/tagout (LOTO) procedures for safely de-energizing cold storage equipment.</li> <li>• Elucidate the importance of safety data sheets (SDS) for refrigerants and cleaning chemicals.</li> <li>• Describe the health, safety, and environmental regulations relevant to cold storage systems.</li> <li>• Determine the food safety standards for storing perishable items in cold storage.</li> <li>• Explain the importance of optimum airflow and ventilation for uniform cooling in cold storage.</li> <li>• Discuss the safe use of personal protective equipment (PPE) in cold storage maintenance.</li> <li>• Describe the importance of keeping the work area free of debris and obstructions in cold storage facilities.</li> <li>• Explain how to clean floors, walls, and ceilings to remove contaminants in cold storage areas.</li> <li>• Discuss the chemicals, materials, and tools needed for cleaning and maintaining cold storage equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to clean the work area using approved disinfectants and sanitizers to remove dust, dirt, and pests.</li> <li>• Show how to collect and dispose of waste materials according to standard procedures and industry requirements.</li> <li>• Demonstrate how to identify potential safety hazards in the work area, such as obstructions and slippery floors, and take appropriate preventive measures.</li> <li>• Show how to check for proper insulation in the cold storage to maintain consistent temperature and minimize energy consumption.</li> <li>• Demonstrate how to ensure adequate lighting in the work area for efficient and safe operations.</li> <li>• Show how to set up shelving or storage racks according to the layout plan, ensuring adequate spacing for air circulation.</li> <li>• Demonstrate how to check for the availability of appropriate Personal Protective Equipment (PPE), such as gloves, safety goggles, and insulated clothing.</li> <li>• Show how to ensure the availability of appropriate maintenance tools and equipment and material handling equipment for cold storage operations.</li> <li>• Demonstrate how to conduct basic tests to check the correct functioning of cold storage equipment.</li> <li>• Show how to carry out basic repair and maintenance of cold storage equipment, following the manufacturer's guidelines.</li> </ul>

<ul style="list-style-type: none"> <li>• Describe the process of cleaning and disinfecting cold storage tools and equipment.</li> <li>• Explain the safe use and storage of sanitizers and disinfectants.</li> <li>• Determine the importance of adequate lighting in cold storage work areas.</li> <li>• Describe how to conduct temperature mapping for uniform cooling in cold storage areas.</li> <li>• Discuss the use of appropriate shelving and storage racks in cold storage.</li> <li>• Explain the importance of spacing in cold storage for optimum air circulation.</li> <li>• Describe proper loading procedures for cold storage.</li> <li>• Explain the tools and equipment used for maintenance and repairs of cold storage systems.</li> <li>• Discuss the use of measuring instruments like thermometers, multimeters, and pressure gauges in cold storage.</li> <li>• Describe how to conduct visual inspections for wear, damage, or leaks in cold storage equipment.</li> <li>• Explain the importance of safe and secure electrical and mechanical connections in cold storage systems.</li> <li>• Discuss how to test cold storage system performance for efficiency.</li> <li>• Describe corrective measures for unusual noises, vibrations, or operational issues in cold storage equipment.</li> <li>• Explain how to clean or replace air filters and strainers in cold storage systems.</li> <li>• Determine how to measure and maintain refrigerant levels within the specified range in cold storage systems.</li> <li>• Explain the use of leak detectors and how to address refrigerant leaks in cold storage.</li> <li>• Describe how to use thermometers to verify the accuracy of temperature sensors in cold storage.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to coordinate with the supervisor for complex repairs requiring professional assistance.</li> <li>• Show how to clean the equipment using approved disinfectants and relevant cleaning accessories.</li> <li>• Demonstrate how to carry out appropriate documentation concerning cold storage preparation activities.</li> </ul>
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- Explain how to calibrate control systems, thermostats, and humidity controls in cold storage systems.
- Discuss how to test alarm systems for temperature deviations or system faults in cold storage.

#### Classroom Aids

Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films

#### Tools, Equipment and Other Requirements

Compressor, Condenser, Evaporator, Fans, Sensors, Thermostat, Humidity Meter, Protective Gloves, Head Caps, Lab Coat, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual.

## Module 3: Handle Cold Storage Facility for Storing Food

*Mapped to FIC/N7011, v2.0*

### Terminal Outcomes:

- Describe how to install the cold storage unit.
- Explain how to start the cold storage system.
- Discuss how to store food products in the cold storage room.

Duration (in hours): 15:00	Duration (in hours): 45:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Discuss the applicable Food Safety and Standards Authority of India (FSSAI) regulations concerning food safety and hygiene.</li> <li>• Explain the principles, techniques, and practices used in cold storage systems.</li> <li>• Describe how to interpret technical drawings and diagrams of a cold storage system and facility.</li> <li>• Elucidate the components of a cold storage system and their installation process.</li> <li>• Discuss different types of refrigerants used in cold storage and the procedure to handle them safely.</li> <li>• Explain methods to calibrate testing equipment and cold storage facility equipment.</li> <li>• Describe various types of produce and food products suitable for cold storage.</li> <li>• Discuss the optimum temperature and humidity required for different food products to prolong their shelf life.</li> <li>• Explain the benefits of maintaining and following a chart for storing different types of produce, including their storage parameters.</li> <li>• Discuss how to operate cold storage equipment to control temperature and humidity.</li> <li>• Describe the procedure for monitoring the storage of produce and food products in cold storage.</li> <li>• Explain how to check the performance of</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to check the compressor discharge and suction pressures after starting the cold storage system to ensure they are in the normal operating range.</li> <li>• Demonstrate how to check the refrigerant charge, compressor oil level, electrical connections for vibration, and fans on the evaporator coil and condensing unit, ensuring no refrigerant leakage from the cooling tower of a water-cooled condenser.</li> <li>• Show how to set the defrost control/timer clock to the required duration, verify defrost initiation settings, and set the temperature control to the desired temperature range.</li> <li>• Demonstrate how to check the functioning and performance of sensors and temperature measuring devices.</li> <li>• Show how to check the operation of cooling equipment to ensure readiness of the cold storage facility for use.</li> <li>• Demonstrate how to calibrate temperature and humidity measuring instruments in the storage facility.</li> <li>• Show how to check the quality of product packaging and stored products in the cold storage facility.</li> <li>• Demonstrate how to set storage parameters (temperature and humidity) for different food products in a computerized cold storage unit.</li> <li>• Show how to store food products in cold storage using appropriate tools and</li> </ul>

<p>cold storage systems.</p> <ul style="list-style-type: none"> <li>• Discuss the procedure for loading, storing, and unloading food products in cold storage.</li> <li>• Describe the procedure for charging refrigerant in cold storage systems.</li> </ul>	<p>equipment.</p> <ul style="list-style-type: none"> <li>• Demonstrate how to maintain optimum air circulation between packages in cold storage.</li> <li>• Show how to monitor and adjust storage room parameters (temperature and humidity) during storage periods.</li> <li>• Demonstrate how to periodically check temperature, weight, and quality of food products stored in cold storage.</li> <li>• Show how to identify and segregate agricultural produce with signs of deterioration from cold storage.</li> <li>• Demonstrate how to report equipment malfunctions to supervisors and take corrective actions as suggested.</li> </ul>
<b>Classroom Aids</b>	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
<b>Tools, Equipment and Other Requirements</b>	
Compressor, Condenser, Evaporator, Fans, Sensors, Thermostat, Humidity Meter, Protective Gloves, Head Caps, Lab Coat, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual.	

## Module 4: Repair and Maintenance of Cold Storage System

*Mapped to FIC/N7011, v2.0*

### Terminal Outcomes:

- Explain how to inspect, repair, or replace the cold storage system and its components.
- Discuss the methods for maintaining the cold storage system and its components.

Duration (in hours): 15:00	Duration (in hours): 45:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain the procedure for identifying and rectifying faults in the cold storage system.</li> <li>• Demonstrate how to identify faulty components in a cold storage system.</li> <li>• Describe the procedure for replacing faulty components of the cold storage system.</li> <li>• Discuss the procedure and sequence for performing preventive maintenance of the cold storage system and its components.</li> <li>• Elucidate the procedure for dismantling, repairing, reassembling, and testing components of the cold storage system.</li> <li>• Discuss how to calculate the refrigerant required for the cold storage area.</li> <li>• Explain the risks associated with working in extreme temperatures and the appropriate safety measures.</li> <li>• Describe the quality parameters used to assess the quality of produce and food products stored in cold storage.</li> <li>• Discuss the relevant Good Manufacturing Practices (GMP) applicable to cold storage operations.</li> <li>• Explain the application of Hazard Analysis and Critical Control Points (HACCP) to cold storage operations.</li> <li>• Discuss the importance of maintaining records of cold storage equipment inspections, maintenance activities, and calibration activities.</li> <li>• Describe the importance of training cold storage personnel on the operation of</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to conduct periodic inspections of the cold storage system and components for correct operation.</li> <li>• Show how to check the operating conditions and identify the need for repair or adjustment in a cold storage system.</li> <li>• Demonstrate how to detect refrigerant leaks using appropriate methods and take corrective action, including recovering and recharging the refrigerant.</li> <li>• Show how to identify malfunctioning components in a cold storage system using appropriate fault detection methods.</li> <li>• Demonstrate how to repair or replace faulty components following the equipment manufacturer's guidelines.</li> <li>• Show how to test the correct operation of equipment after reassembling following repair in a cold storage system.</li> <li>• Demonstrate how to charge the system with the correct refrigerant as required in a cold storage system.</li> <li>• Show how to maintain the required operating conditions in cold storage for the efficient operation of the cold storage system.</li> <li>• Demonstrate how to carry out periodic maintenance of the cold storage system as per the manufacturer's guidelines.</li> <li>• Show how to check evaporators for ice accumulation or proper defrosting and wash evaporator coils to remove dust and foreign materials.</li> </ul>

<p>the cold storage system, safety protocols, and emergency procedures.</p> <ul style="list-style-type: none"> <li>• Explain different types of documentation requirements concerning cold storage operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to check evaporator and condenser fan blades for fractures and perform maintenance.</li> <li>• Show how to maintain the fan, including cleaning, tightening fan screws, lubrication, and replacing worn-out fan blades and faulty fan motors.</li> <li>• Demonstrate how to check defrost controls for correct operation and position of defrost heaters for optimal heat transfer.</li> <li>• Show how to check voltage at each heater terminal and ensure heater terminals are in good condition.</li> <li>• Demonstrate how to identify and remove foreign materials from the drain pan to ensure proper drainage and prevent blockages.</li> <li>• Show how to check the drain line heater to ensure it functions correctly and prevents ice buildup and potential blockages.</li> <li>• Demonstrate how to replace a worn-out condenser motor in a compressor unit.</li> <li>• Show how to check electrical components, tighten electrical connections, identify and replace damaged wiring in a cold storage system.</li> <li>• Demonstrate how to check and ensure proper functioning of pressure and safety controls, solenoid valves, and cold room temperature thermostat.</li> <li>• Show how to maintain the recommended oil level in the compressor unit, check condenser condition, refrigerant line insulation, and refrigerant level, and check for refrigerant leakages and take appropriate action.</li> <li>• Demonstrate how to maintain daily inventory records including product description, batch number, SKU, quantity, weight, and storage location.</li> <li>• Show how to update daily cold storage stock records accounting for the receipt, dispatch, and handling of food products.</li> <li>• Demonstrate how to track expiration or best-before dates of perishable items and apply the FIFO technique to maintain</li> </ul>
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	<p>stock quality.</p> <ul style="list-style-type: none"> <li>• Show how to maintain temperature records including monitoring logs, temperature readings, and deviations.</li> <li>• Demonstrate how to document scheduled and completed maintenance activities for cold storage units and other equipment.</li> <li>• Show how to maintain records of safety inspections, internal audits, quality checks, and resolutions in compliance with applicable regulations.</li> </ul>
<b>Classroom Aids</b>	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
<b>Tools, Equipment and Other Requirements</b>	
Compressor, Condenser, Evaporator, Fans, Sensors, Thermostat, Humidity Meter, Protective Gloves, Head Caps, Lab Coat, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual.	

## Module 5: Implement Personal Hygiene and Good Manufacturing Practices

*Mapped to FIC/N9906, v1.0*

### Terminal Outcomes:

- Discuss the importance of personal hygiene and GMP at the workplace
- Demonstrate the tasks to be performed for ensuring personal hygiene and GMP practices at the workplace.

Duration (in hours): 05:00	Duration (in hours): 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Define hazards and risks.</li> <li>• Discuss the various types of health and safety equipment available in an organisation and the methods for obtaining them.</li> <li>• Discuss the organisational health and safety policies and procedures.</li> <li>• Discuss site relevant documented procedure for Personal Hygiene and Visitor/ Contractor rules.</li> <li>• Explain work instructions at different levels of employees inside a food manufacturing site.</li> <li>• Discuss how to conduct timely planning and participation of relevant training and awareness sessions on personal hygiene, GMP and related topics.</li> <li>• Explain the importance of timely medical examination from a prescribed and authorized doctor and to comply with the guidelines of Schedule IV as described in Food Safety Standard Authority of India (FSSAI) guidelines.</li> <li>• State how to follow a site relevant documented procedure and area wise work instructions for Good Manufacturing Practices (GMP) to be followed on the site.</li> <li>• List validated Do's &amp; Don'ts inside a food manufacturing firm.</li> <li>• State process flow charts, HACCP summary plan and critical process parameters in each and respective areas of the production line.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the steps to be performed for implementing good manufacturing practices (GMP).</li> <li>• Demonstrate how to follow work instructions at different levels of employees inside a food manufacturing site and ensure that the relevant instructions are well communicated and being followed at the fixed timelines.</li> <li>• Show how to fill data in daily monitoring checklist related to personal hygiene, food safety and GMP.</li> <li>• Demonstrate the process to follow man and materials movement throughout the production facility, to restrict unwanted hazards to cross contaminate the products which are being manufactured in the facility.</li> <li>• Show how to tag and number all the equipment, machinery, tools, and other processing aids to keep a proper traceability of the product being manufactured and handled at site.</li> <li>• Demonstrate process of record keeping and documentation such as Daily Monitoring Sheets, Batch Traceability Records, machine records, product parameters, process control parameters etc.</li> </ul>

<ul style="list-style-type: none"> <li>• Explain how to identify the material requirements such as manufacturing equipment's, Utensils and other processing aids, cleaning chemicals, cleaning work instructions in all the relevant areas of manufacturing facility.</li> <li>• Define the Allergens, their risks and the allergen requirements.</li> <li>• State the relevance of guidelines in manufacturing area and how training evaluation will be implemented.</li> <li>• Explain the process of audits and ways to address the aspects of Good Manufacturing Procedures, personal hygiene and food safety.</li> </ul>	
<b>Classroom Aids</b>	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
<b>Tools, Equipment and Other Requirements</b>	
GMP format and guidelines, allergen manual, personal hygiene guidelines, etc.	



## Module 6: Apply Food Safety Practices at Workplace

*Mapped to FIC/N9906, v1.0*

### Terminal Outcomes:

- List the food safety practices at the workplace and the ways to implement them.
- Demonstrate the steps to be followed to implement food safety procedures effectively.

Duration (in hours): 05:00	Duration (in hours): 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• List the various types of health and safety hazards present in the environment.</li> <li>• Discuss the possible causes of risk, hazard or accident at the workplace.</li> <li>• Elucidate the standard practices and precautions used to control and prevent risks, hazards and accidents at the workplace.</li> <li>• Explain requirements to maintain updated facilities, equipment and tool to minimize the risks associated with the products being handled at the site.</li> <li>• State the importance of using protective equipment and clothing for specific tasks and work conditions.</li> <li>• Discuss the role of organisational protocols in preventing accidents and hazards.</li> <li>• Discuss the significance of various types of hazard and safety signs.</li> <li>• Explain FSSAI Schedule IV requirements related to: Pest Control, Cleaning and Sanitation, Utilities, Waste Disposal, Prevention of Cross Contamination, allergen management, corrective action, preventive actions, food operation control etc.</li> <li>• Discuss the relevance of checking critical control points and product parameters.</li> <li>• Explain importance of record keeping and documentation such as daily monitoring sheets, cleaning sheets, parameters etc.</li> <li>• Discuss how to report any food safety and GMP issue to supervisor, if any.</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to apply appropriate techniques to deal with hazards safely and appropriately.</li> <li>• Demonstrate the steps for checking critical control points and product parameters.</li> <li>• Show how to record keeping and documentation such as daily monitoring sheets, cleaning sheets, parameters etc.</li> <li>• Demonstrate appropriate ways to respond to an accident situation or medical emergency promptly and appropriately.</li> <li>• Demonstrate the steps to be followed during emergency and evacuation procedure.</li> </ul>

### Classroom Aids

Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films

### 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 7: Employability Skills (30 Hours)

*Mapped to DGT/VSQ/N0101, v1.0*

**Duration: 30:00**

### Key Learning Outcomes

#### Introduction to Employability Skills Duration: 1 Hour

After completing this programme, participants will be able to:

1. Discuss the importance of Employability Skills in meeting the job requirements

#### Constitutional values - Citizenship Duration: 1 Hour

2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
3. Show how to practice different environmentally sustainable practices

#### Becoming a Professional in the 21st Century Duration: 1 Hour

4. Discuss 21st-century skills.
5. Display a positive attitude, self-motivation, problem-solving, time management skills and continuous learning mindset in different situations.

#### Basic English Skills Duration: 2 Hours

6. Use appropriate basic English sentences/phrases while speaking

#### Communication Skills Duration: 4 Hours

7. Demonstrate how to communicate in a well-mannered way with others.
8. Demonstrate working with others in a team

#### Diversity & Inclusion Duration: 1 Hour

9. Show how to conduct oneself appropriately with all genders and PwD
10. Discuss the significance of reporting sexual harassment issues in time

#### Financial and Legal Literacy Duration: 4 Hours

11. Discuss the significance of using financial products and services safely and securely.
12. Explain the importance of managing expenses, income, and savings.
13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws

#### Essential Digital Skills Duration: 3 Hours

14. Show how to operate digital devices and use the associated applications and features, safely and securely
15. Discuss the significance of using the internet for browsing, and accessing social media platforms, safely and securely

#### Entrepreneurship Duration: 7 Hours

16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges

**Customer Service Duration: 4 Hours**

17. Differentiate between types of customers

18. Explain the significance of identifying customer needs and addressing them

19. Discuss the significance of maintaining hygiene and dressing appropriately

**Getting ready for Apprenticeship & Jobs Duration: 2 Hours**

20. Create a biodata

21. Use various sources to search and apply for jobs

22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview

23. Discuss how to search and register for apprenticeship opportunities

## Module 8: On-the-Job Training

### Mapped to Assistant Technician – Cold Storage

<b>Mandatory Duration: 60:00</b>	<b>Recommended Duration: 00:00</b>
<b>Location: On-Site</b>	
<b>Terminal Outcomes</b> <ul style="list-style-type: none"> <li>• Demonstrate the process of preparing the work area for cold storage operations, ensuring safety and efficiency.</li> <li>• Demonstrate the procedure for preparing cold storage equipment before use to optimize its performance and ensure operational readiness.</li> <li>• Demonstrate the installation of a cold storage unit.</li> <li>• Demonstrate how to start up the cold storage system.</li> <li>• Demonstrate the process for storing food products in the cold storage room.</li> <li>• Demonstrate how to inspect, repair, or replace the cold storage system and its components.</li> <li>• Demonstrate the methods for maintaining the cold storage system and its components.</li> <li>• Demonstrate the tasks necessary to ensure personal hygiene and adherence to Good Manufacturing Practices (GMP) in the workplace.</li> <li>• Demonstrate the implementation of food safety practices at the workplace and methods for their application.</li> <li>• Demonstrate the steps required to effectively implement food safety procedures.</li> </ul>	
<b>Tools, Equipment and Other Requirements:</b>	
Cold Storage Unit/Chamber, Refrigeration Control Panels, Loading and Unloading Equipment such as Forklifts and Pallet Jacks, Waste Management Tools (Waste bins and disposal containers), Shelving and Storage Racks (Adjustable shelving units).	

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialisation	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
M.Sc/M.Tech/M.E.	Food Technology or Food Engineering	2	Food industry	1	Training of Assistant Technician – Cold Storage	
B.Sc or Graduate / B.Tech/ BE	Food Technology/ Home Science	3	Food industry	2	Training of Assistant Technician – Cold Storage	
Diploma/ Certificate course	Hotel management/ Food Science/ Home Science	4	Food industry	2	Training of Assistant Technician – Cold Storage	

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Assistant Technician – Cold Storage” mapped to QP: “FIC/Q7004, v4.0”. Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: “Trainer (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPSC guidelines is 80%.

## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
M.Sc/M.Tech /M.E.	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/ Certificate course	Hotel Management/ Food Science/ Home Science	4	Food processing	2	Food processing	

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Assistant Technician – Cold Storage” mapped to QP: “FIC/Q7004, v4.0”. Minimum accepted score is 80%.	Certified for the Job Role: “Assessor (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 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. There in 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 banks 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.

### On the Job:

1. Each module (which covers the job profile of Assistant Technician – Cold Storage) will be assessed separately.

2. The candidate must score 50% in each module to successfully complete the OJT.

3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:

- Videos of Trainees during OJT
- Answer Sheets of Question Banks
- Assessing the Logbook entries of Trainees at Employer location
- Employer Performance Feedback.



4. Assessment of each Module will ensure that the candidate is able to:

- Prepare for the cold storage operations.
- Handle cold storage facility for effective food storage.
- Implement food safety guidelines in food processing.
- Develop employability skills.

## References

### Glossary

Term	Description
<b>Declarative Knowledge</b>	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.
<b>Key Learning Outcome</b>	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).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
<b>Procedural Knowledge</b>	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.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do it upon the completion of the training.
<b>Terminal Outcome</b>	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
NCVET	National Council for Vocational Education and Training
FICSI	Food Industry Capacity & Skill Initiative
QP	Qualification Pack
MC	Model Curriculum
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
NCO	National Classification of Occupations
ES	Employability Skills
HACCP	Hazard Analysis and Critical Control Points
FSSAI	Food Safety and Standards Authority of India
GMPs	Good Manufacturing Practices
PPE	Personal Protective Equipment
LOTO	Lockout/Tagout
SOS	Safety Data Sheets