Model Curriculum

QP Name: Food Product Developer

QP Code: FIC/Q9301

QP Version: 1.0

NSQF Level: 5

Model Curriculum Version: 1.0

Food Industry Capacity and Skill Initiative (FICSI)
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Training Parameters

Sector	Food Processing
Sub-Sector	Generic
Occupation	Research and Development
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification and Experience	1. Bachelor's degree in Microbiology/Foodtechnology/Biotechnology or allied disciplines + 1 Year of relevant experience 2. Class 12th pass in science steam and 3 years of diploma in relevant stream + 1 Year of relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	21 years
Last Reviewed On	12/10/21
Next Review Date	12/10/24
NSQC Approval Date	30/12/21
QP Version	1.0
Model Curriculum Creation Date	12/10/21
Model Curriculum Valid Up to Date	12/10/24
Model Curriculum Version	1.0
Minimum Duration of the Course	400 Hours
Maximum Duration of the Course	400 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 activities to identify new recipes and testing the quality of food as per FSSAI guidelines.
- Perform various preparatory and product development tasks as per SOP.
- Perform various tasks to conduct shelf study of food product.
- Apply necessary health and safety practices to ensure food safety and personal hygiene
- Work with various organisational departments 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**	**12:00**	**00:00**	**00:00**	**44:00**
Module 1: Introduction to food processing sector and the job of a "Food Product Developer"	04:00	00:00	00:00	00:00	04:00
Module 14: Employability and Entrepreneurship Skills	28:00	12:00	00:00	00:00	40:00
FIC/N9301: Prepare recipe formulation and guidelines for product development NOS Version No.: 1.0 NSQF Level: 5	**40:00**	**87:00**	**00:00**	**00:00**	**127:00**
Module 2: Recipe formulation and scale up process guidelines for product development	20:00	40:00	00:00	00:00	51:00
Module 3: Guidelines and benchmarking for new product development	20:00	47:00	00:00	00:00	51:00
FIC/N9302: Perform tasks for product development	**40:00**	**95:00**	**00:00**	**00:00**	**135:00**

NOS Version No.: 1.0 NSQF Level: 5					
Module 4: Perform tasks for product development	20:00	45:00	00:00	00:00	80:00
Module 5: Regulations for packed food product	20:00	50:00	00:00	00:00	80:00
FIC/N9904 – Ensure Food Safety at the Workplace NOS Version No. 1.0 NSQF Level 5	**08:00**	**08:00**	**00:00**	**00:00**	**16:00**
Module 6: Basic Food Safety Standards	08:00	08:00	00:00	00:00	16:00
FIC/N9903 – Ensure Workplace Health and Safety NOS Version No. 1.0 NSQF Level 5	**10:00**	**16:00**	**00:00**	**00:00**	**26:00**
Module 7: Follow Preventive Measures to avoid Accidents	02:00	04:00	00:00	00:00	06:00
Module 8: Manage Workplace Emergencies	04:00	08:00	00:00	00:00	12:00
Module 9: Manage Infection Control	04:00	04:00	00:00	00:00	08:00
FIC/N9902 – Work Effectively in an Organization NOS Version No. 1.0 NSQF Level 3	**08:00**	**08:00**	**00:00**	**00:00**	**16:00**
Module 10: Working Effectively in an Organization	08:00	08:00	00:00	00:00	16:00
SGJ/N1702 – Optimize Resource Utilization at the Workplace NOS Version No. 1.0 NSQF Level 3	**12:00**	**24:00**	**00:00**	**00:00**	**36:00**
Module 11: Material Conservation	04:00	08:00	00:00	00:00	12:00
Module 12: Monitor Health and Safety Standard	04:00	08:00	00:00	00:00	12:00
Module 13: Waste Management Recycling	04:00	08:00	00:00	00:00	12:00
Total Duration	**150:00**	**250:00**	**00:00**	**00:00**	**400:00**

Module Details

Module 1: Introduction to food processing sector and the job of a 'Food Product Developer'

Bridge Module

Terminal Outcomes:

- State the importance of an Food Product Developers in a food processing industry.
- Discuss the roles and responsibilities of a Food Product Developer in a food processing industry

Duration: *04:00*	**Duration**: *00:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the roles and responsibilities of a Food Product Developer in a food processing industry. • Discuss the future trends and career growth opportunities available to a Food Product Developer. • Discuss the significance of a Food Product Developers to ensure smooth operations in the food processing industry. • List various food product development activities that are performed in the job. • List the various terminologies used in carrying out food product development activities in food processing industry. • Discuss the organisational policies to be followed pertaining to the delivery standards, health, safety and hazard handling procedures, integrity, dress code, etc.	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Nil	

Module 2: Recipe formulation and scale up process

Mapped to FIC/N9301, v1.0

Terminal Outcomes:

- List the pre-requisites for new product development process
- Perform tasks related to scale up process

Duration: *20:00*	**Duration: *40:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the information to be obtained from the consumer and market research data received from the marketing team. • Describe food processing methods i.e. cooking, baking, roasting, drying, freezing, etc. • Describe various sensory parameters i.e. taste, texture, smell, appearance, etc. and their impact on the food product. • Describe standardized weights and measures, weight range of package and recommended maximum scale of interval for a food product. • List the steps to be performed for developing the product on a larger scale after the finalization of prototype. • Elucidate halal and haram ingredients and process. • Describe food production process i.e. batch processed or continuous processed. • Discuss the need of nutritional analysis data of food product. • Describe various testing parameters i.e. appearance, color, taste, odor, adulterants, contaminants, nutritional value, etc. and their impact on the food product. • Describe basic seven quality management tools – process flow chart, check sheets, histograms, fishbone diagrams, Scatter diagrams, Pareto analysis, Control chart.	• Apply appropriate food processing methods to conceptualize ideas and experiment from various combinations of old and new ingredients and recipes. • Demonstrate use of new or existing ingredients, recipes or production process to develop the prototype of food product in different formulations. • Apply appropriate ways to test the samples of prototype batch. • Show how to calculate recipe costing and sizing by following SOP. • Apply appropriate ways to calculate Process Loss/Process efficiency and identify gross margin of the product. • Demonstrate organizational procedure of developing the product on a larger scale after the finalization of prototype. • Apply appropriate ways to conduct consumer focus testing, evaluate the consumers feedback and refine the recipe as per consumer preference for standardizing the recipe ingredients and production process. • Show how to define acceptable ingredient and product specification and develop standards for comparing samples for scale. • Show how to verify Halal certificate and mention allergens if present in the product. • Demonstrate how to set parameters for testing the quality of new products.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Safety gloves, Face mask, Safety shoes, Safety hat, Apron, Sample documents, Sample Recipes, Food packaging material, Sample ingredients	

Module 3: Guidelines and benchmarking for new product development

Mapped to FIC/N9301, v1.0

Terminal Outcomes:

- Perform various tasks to identify new recipes and ideas for new product as per FSSAI guidelines.
- Perform tasks to test the quality of food as per FSSAI guidelines.

Duration: *20:00*	**Duration: *47:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss food-related discipline such as food science, nutrition, microbiology, chemistry, or food business. • Recall FSSAI regulations for developing new recipes. • Recall food safety standards that are customary within the food industry and mandated by government regulations. • Discuss the need of guidelines for maintaining the same quality of food product throughout the organization. • Explain five views of assessing the quality – transcendental view, product-based view, user-based view, manufacturing-based view and value-based view. • Describe FSSAI guidelines for avoiding mixing of permitted and non-permitted ingredients in the food product. • Elucidate Maximum Permitted Limit (MPL) for food additives and Total Phenolic Content (TPC) limit for fresh and reused cooking oil set up by FSSAI. • Describe food adulteration and food contamination. • Elaborate ways to analyze the data and identify opportunities for developing new products. • Describe functioning of excel or software like SAP for preparing records and documents as per organizational requirements.	• Show how to obtain the feedback from sensory team and incorporate the desired changes in ingredients and process accordingly. • Apply appropriate ways to identify new ideas and methods to achieve the desired results and develop new recipes as per the FSSAI regulations. • Show how to prepare BOM and estimate costing for different products. • Employ practices to check that food production process is batch processed or continuous processed. • Apply appropriate ways to collect data of nutritional analysis. • Create sample guidelines for new products by following FSSAI guidelines. • Apply appropriate ways to develop technical and in process specification of products and types of tests to be conducted for the pilot trial. • Show how to select the products for benchmarking and identify key performance metrics for it. • Apply appropriate ways to identify opportunities for developing new products. • Demonstrate use of excel or software like SAP for preparing records and documents.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Sample documents, Sample Recipes, Food packaging material, Sample BOM, Sample ingredients SAP, MS Office software	

Module 4: Perform tasks for product development

Mapped to FIC/N9302, v1.0

Terminal Outcomes:

- Perform various tasks and processes involved in product development and formulation.
- Perform various tasks for conducting shelf life study of product.

Duration: *20:00*	**Duration**: *45:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss different processes involved in the product formulation. • Discuss the need of maintaining a list of multiple tasks have to perform simultaneously. • List the activities need to perform for product development in sequential manner as per SOP. • List the preparatory activities steps to be performed for conducting the shelf life study of food product. • Describe parameters i.e. temperature, relative humidity, surrounding hygiene required to do shelf life study. • Describe different sensory tests, chemical tests and nutritional analysis need to done on food product. • Elucidate proximate and ultimate analysis. • Discuss the process of handling plant trials of food product. • List the parameters to be maintained for sensory evaluation. • State the importance of list of available material for current and future trials. • Discuss the documents and records such as BOM, final product etc. needed to be prepared and maintained by following organisational procedures.	• Prepare a sample list of processes involved in the product formulation. • Perform preparatory activities for conducting the shelf life study of food product. • Perform steps to conduct shelf life study by conducting chemical tests and nutritional analysis of different samples for the product • Role play a situation on how to create a team of trained sensory panellists and perform sensory evaluation of product. • Prepare a sample list of available material for current as well as future trials. • Prepare sample records consisting of information such as the type of tasks performed, BOM etc.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Safety gloves, Face mask, Safety shoes, Safety hat, Apron, Sample documents, Sample Recipes, Food packaging material, Sample BOM, Sample ingredients SAP, MS Office software	

Module 5: Regulations for packed food product

Mapped to FIC/N9302, v1.0

Terminal Outcomes:

- Perform various tasks and processes involved in product development and formulation.
- Perform various tasks for conducting shelf life study of product.

Duration: *20:00*	**Duration: *50:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the methods used for safe disposal of expired material from the food processing workplace. • Discuss the details such as calorific value, measurement unit, etc. needed to mark or label on the food product as per FSSAI standards. • Describe use of colour coded labels for high fat, salt and sugar in product. • List different food grade packaging material suitable for the food product type.	• Show how to supervise the trial of food product on shop floor and make arrangements for 3rd party lab test from NABL accredited lab before Industrial launch. • Show how to dispose expired material safely as per organisational and environmental guidelines. • Demonstrate organisational procedure of arranging required material in advance for the product development. • Apply appropriate ways to mark or label the required details on food product as per FSSAI standards. • Employ appropriate ways to check that no dents, rust, perforations and seam distortions in the can used for food packaging.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Safety gloves, Face mask, Safety shoes, Safety hat, Apron, Sample documents, Sample Recipes, Food packaging material, Sample BOM, Sample ingredients SAP, MS Office software	

Module 6: Basic Food Safety Standards

Mapped to FIC/N9904, v1.0

Terminal Outcomes:

- Explain the various food safety standards to be followed during the production process
- Prepare sample reports regarding food safety regulations, inspections, faults observation, etc.

Duration: *08:00*	**Duration**: *08:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the types of biological, chemical and physical hazards present in the food processing industry • Discuss various types of food contaminations, their causes, and ways to prevent them • Discuss the importance of following the standard procedures for ensuring food safety) • State the importance of ensuring that the materials (such as raw materials, processed materials, finished goods, etc.) are adequately isolated to prevent them from contamination • Outline the standard regulations to be followed for ensuring food safety as listed in 'The Food Safety and Standards Act, 2006 that need to be followed during production • Discuss the role of HACCP, VACCP and TACCP as well as procedures to implement these in the food industry • Discuss about product information and consumer awareness, product recall and withdrawal, and traceability • Explain the procedure to conduct workplace food safety audits • Discuss various types of allergens and their management at the workplace • Discuss the corrective measures to be applied to ensure food safety • List various issues that can arise during food production and other processes • Discuss the procedure of performing root cause analysis and taking corrective and	• Apply appropriate practices to identify various biological, chemical, and physical hazards at various stages (procurement of raw material; production, manufacturing, distribution, delivery of finished product, etc.) of food processing • Employ appropriate practices to implement food safety procedures and regulatory policies at the workplace • Employ appropriate practices to establish and follow Good Manufacturing Practices (GMPs) related to ergonomics, cleaning and sanitation, equipment and containers, pest control, facilities, food storage, transportation, distribution etc. • Demonstrate the procedure followed for allergen management and handling and storage of raw materials • Apply appropriate practices to establish and follow monitoring systems, like Hazard Analysis Critical Control Point (HACCP) • Apply relevant practices to take appropriate action in instances such as VACCP (Vulnerability Assessment Critical Control Points) and TACCP (Threat Assessment Critical Control Points) • Apply appropriate practices to plan and execute an audit on food safety address the non-conformance with root cause analysis (RCA), and take corrective action preventive action (CAPA) • Role play a situation on how to address issues pertaining to food safety and quality reported by the team members

preventive actions against workplace problems • State the significance of training the team members regarding various food safety procedures such as GMP, HACCP, etc. • List the information to be recorded in the work process	• Prepare sample reports for food safety regulations followed, inspections done, faults observed, etc. • Dramatize a situation on how to organize training and workshops on food safety aspects such as Good Manufacturing Practices (GMP), HACCP, VACCP, TACCP, etc.
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	
Sample pictures of various biological, chemical, and physical hazards, Sample pictures of Contaminants, samples of potential allergens, process flow chart and HACCP plan.	

Module 7: Follow Preventive Measures to avoid Accidents

Mapped to FIC/N9903, v1.0

Terminal Outcomes:

- Explain the standard procedure to be followed for dealing with workplace hazards safely
- Describe how to minimize potential risks and accidents at the workplace
- Demonstrate how to train the workforce on accident prevention techniques effectively

Duration: *02:00*	**Duration**: *04:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define 'hazards' and 'risks' • Discuss the causes of various types of workplace hazards, risks and accidents, preventive measures to be taken as well as the procedures to deal with the same • State the importance of maintaining the equipment effectively • Discuss the standard practices to be followed to control and prevent risks, hazards, and accidents • Discuss the various types of safety signs and their relevance at the workplace • State the significance of displaying the common hazard signages wherever required • Outline the importance of ensuring the availability of general health and safety equipment at all times • Describe the causes of fire, ways to prevent them and rescue techniques to be followed at times of fire at the workplace • Outline the purpose and usage of various Personal Protective Equipment (PPE) required at the workplace	• Demonstrate how to use and dispose of relevant personal protective equipment as per tasks and work conditions • Show how to implement organisational safety protocols to prevent accidents and hazards at the workplace • Demonstrate how to use various types of fire extinguishers effectively Dramatize a situation on how to train the workforce on accident prevention techniques (such as role of appropriate PPE; use of fire extinguishers, dealing with hazards; identification of risks that could lead to accidents; safety protocols followed to avoid accidents; role of different types of hazard signs, safe lifting and carrying practices, etc. required 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	
Personal Protection Equipment: Safety glasses, Head protection, Rubber gloves, Safety footwear, Warning signs and tapes, Fire extinguisher, First aid kit, Relevant Standard Operating Procedures and Sample reports	

Module 8: Manage Workplace Emergencies

Mapped to FIC/N9903, v1.0

Terminal Outcomes:

- Apply appropriate practices to deal with the emergencies at workplace effectively
- Describe the trainings to be provided for dealing with emergencies at the workplace

Duration: *04:00*	**Duration**: *08:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss workplace emergency and evacuation procedures and the importance of following them • Explain the procedure to be followed for administering immediate first aid to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning, etc. • Discuss the procedure to be followed for providing artificial respiration and cardio-pulmonary resuscitation (CPR) to the affected person and highlight its significance • State the impact of health, safety and security breaches on self, team, and work process	• Demonstrate the procedure to be followed to free a person from electrocution safely • Show how to administer appropriate first aid procedure to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning, etc. • Demonstrate the procedure e followed provide artificial respiration and cardio-pulmonary resuscitation (CPR) in various instances (e.g., cardiac arrest) • Roleplay a situation on how to report information such as identified breaches in health, safety and security policies and procedures to the concerned authority accurately • Dramatize a situation on how to train the workforce on emergency procedures (such as safe evacuation; treating a person from electrocution; immediate first aid to be given at times of cuts, bleeding, burns, choking, electric shock, poisoning, etc.; administering artificial respiration and cardio-pulmonary resuscitation (CPR); escalating issues beyond own scope, etc.) to be followed 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	
Personal Protection Equipment: Safety glasses, Head protection, Rubber gloves, Safety footwear, Warning signs and tapes, Fire extinguisher, First aid kit, Relevant Standard Operating Procedures and Sample reports	

Module 9: Manage Infection Control

Mapped to FIC/N9903, v1.0

Terminal Outcomes:

- Describe the various steps to be followed for managing infections at the workplace
- Perform various tasks to train the workforce on infection control practices effectively

Duration: *04:00*	**Duration**: *04:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the general sources of infections • Discuss the procedures to be followed to tackle infection spread and the importance of carrying out the sanitization of the work area, equipment and related facilities as per standards • Explain various ways to store the sanitization materials appropriately • Discuss various types of potential infections along with the precautionary measures to be taken, and safety protocols to be followed at the workplace • Discuss appropriate actions to be taken during illness to self and others at the workplace • Describe the parameters to be assessed during health and safety audits, their acceptability levels of appropriateness and the procedure to conducting these audits • Discuss various parameters to be assessed and compliance issues to be addressed during the review of SOPs and the ways to improve them as per required quality and safety standards • State the importance of undergoing preventive health check-ups organized by the organisation in compliance with FSSAI guidelines • List various types of documents and records to be maintained in the work process	• Employ appropriate practices to follow and enforce Good Hygiene Practices (GHP) among the team members • Employ appropriate practices to store sanitisation materials effectively • Dramatize a situation to address team issues related to workplace health and safety Roleplay on how to train the workforce on infection control practices to be followed 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	
Relevant Standard Operating Procedures and Sample reports	

Module 10: Working Effectively in an Organization

Mapped to FIC/N9902, v1.0

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**
• 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) • Discuss the applicable laws, acts and provisions defined for PwD by the statutory bodies	• 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

• 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, v1.0

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**
• 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	• 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, v1.0

Terminal Outcomes:

- Discuss optimal usage of energy/electricity

Duration: *04:00*	**Duration**: *08 :00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• 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	• 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, v1.0

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**
• 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	• 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**
• 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 • List the types of enterprises • Understand the importance of effective speaking and listening	• 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.

• 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

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification *<Select the minimum educational requirements, such as 12th Pass, Graduate or NSQF certified.>*	**Specialization** *<Specify the areas of specialization that are desirable.>*	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate	Food Science	4	Research and Development	1	Training individuals on new food product development	

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "Food Product Developer" mapped to QP: "FIC/Q9301, v1.0". Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/Q2601". Minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification *<Select the minimum educational requirements, such as 12th Pass, Graduate or NSQF certified.>*	**Specialization** *<Specify the areas of specialization that are desirable.>*	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduate	Food Science	3	Research and Development	1	Accessing individuals on new food product development	

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "Food Product Developer" mapped to QP: "FIC/Q9301, v1.0". Minimum accepted score is 80%.	Recommended that the Assessor is certified for the Job Role: "Assessor", mapped to the Qualification Pack: "MEP/Q2701". Minimum accepted score as per MEPSC guidelines is 80%.

Assessment Strategy

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

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

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

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

A. Mid- term assessment

B. Term / Final Assessment

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

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

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

I. **Written Test:** This will comprise of
   a. True / False Statements
   b. Multiple Choice Questions
   c. Matching Type Questions

   Online system for this will be preferred.

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

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

Glossary

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

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
FIFO	First In First Out
FEFO	First Expire First Out
GMP	Good Manufacturing Practices
GHP	Good Hygiene Practices
CPR	Cardiopulmonary Resuscitation
ETP	Effluent Treatment Plant