Competency Based Curriculum

Millets Products Processor

Course Code: FIC/Q1011, Version: 1.0

NSQF Level: 3

Duration: Mandatory 180 hours; With electives – 360 Hours

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Course Details

Course Name	**Millets Products Processor**
Course Code and Version	FIC/Q1011, 1.0
NSQF Level	3
Course Description	This course details the process of commercial production of various types of value added millet products. The process involves selection of millets and other raw materials, pre-processing, production, packaging, and storage.
Nco-2015	NCO-2015/8160.1000,1900, 2015/7512.0100
Entry Profile	1. Grade 10 pass OR 2.Grade 8 pass with 2 years of NTC/NAC after 8th OR 3. Grade 8 pass and pursuing continuous schooling in regular school OR 4. Grade 9 pass and pursuing continuous schooling in regular school OR 5. 8th Grade Pass with 2-year of relevant experience OR 6. 9th Grade Pass with 1-year of relevant experience OR 7. 5th Grade Pass with 5-year of relevant experience OR 8.Previous relevant qualification of NSQF Level 2.5 with 1.5years of relevant experience OR 9.Previous relevant qualification of NSQF Level 2 with 3 years of relevant experience
Minimum Entry Age	16 years
Any Licensing Requirements (wherever applicable)	NA
Assessing and Certifying Body	Sector Skill Council for Food Processing

Employment Avenues/opportunities	In most cases, the individual has an opportunity to join a value-added millet manufacturing unit and progress to become an entrepreneur to supply value added millet products through their own manufacturing unit.
Type of Industry	☒Organized ☒Unorganized ☒Manufacturing ☐Service
Curriculum Creation Date	15/03/2023
Curriculum Valid up to Date	12/06/2026
List of Annexures (Please Refer to the Annexure Document)	• TBD

Module Details

S.No.	Module Name	Key Learning Outcomes		Training Duration (Hours)			Equipment Required
		Theoretical	**Practical**	Th	Pr	Total	
	Mandatory Component (180 Hours) - Tentative Budget for Lab Set Up to conduct Practical duration – 5 Lacs						
1	Prepare for production	a. Discuss the size and scope of the food processing industry in brief. b. Discuss the future trends and career growth opportunities available for Millet Product Processor in the food processing industry. c. Summarise the key roles and responsibilities of 'Millet Product Processor'. d. Prepare and maintain process machineries and tools as per requirements. e. Describe and discuss instruments, utensils, and preparation for producing value added Millet products f. Identify and Select the suitable ingredients required to prepare the type of value-added millet products, as per Standard Formulation	1. Demonstrate the types of equipment and tools and ask them to label each equipment with their identification characteristics. 2. Show the various types of Millets and demonstrate their traits and characteristics for identification and analysis. 3. Demonstrate the cleaning process and show the cleaning of each equipment with the use of various cleaning tools. Also explain the functions of cleaning tools and cleaning agents 4. Prepare a sample recipe of millet composite flour and show the steps of weighing and measurement involved in recipe formulation 5. QA Session	10	20	30	Washer Cleaner Vacuum cleaner Cleaning tools Buckets, Dustbins Utensils, Containers and tools Weighing Machine Measuring tools Chemicals Air dehumidifier Worktables chairs etc

		g. Describe the process of Batch Formation and Mathematics involved h. Weigh the appropriate quantity of required ingredients i. Clean and wash the ingredients as per the Standard Operating Procedure (SOP) j. Describe the primary and secondary food processing techniques for producing value added millet products					

2	Produce millet based composite flour	a. Describe the different types of millets and their characteristics b. Explain the quality parameters and nutritional information of each millets type c. Explain the significance of composite millet based flour and how it is different from other flour. e. Describe the type of sieves and sieving process for different types of flour f. List the points on importance of sieving process g. Identify the Type of containers and utensils used for flour manufacturing and storage h. Explain the blending process to produce composite flour i. Understand the packaging and labelling requirements of FSSAI j. Explain types of food packaging and the process to pack the flour	**Perform at least 2 practicals on different formulations of Millets composite flour:** 1. Place all types of Millets on the table and ask students to Identify and explain each one by one. During the demonstration, ask them to include the characteristics of each millet and discuss their usage. 2. Perform Qualitative and Quantitative testing of Millets ingredients as per FSSAI/ BIS standards. 3. Formulate a batch recipe for composite flour 4. Perform sieving of flour using automatic/manual sifter 5. Perform blending operation using recommended blenders for blending of composite flour 6. Show the different types of packaging and demonstrate the process of packaging of composite flour by following all FSSAI packing and labelling guidelines 7. QA Session	30	60	90	● Sieving machine ● Blender ● Sieves of different sizes ● Utensils and containers ● Protective gloves ● Head caps ● Aprons ● Safety goggles ● Safety boots ● Packaging material ● Packaging machine ● Sealing machine

3	Apply food safety guidelines in Food Processing	a. Define food safety and Food Quality and other terminologies involved in the implementation of food safety at the workplace. b. Define hazards and risks, and their types c. Explain the food safety management systems and Schedule IV Requirements such as personal hygiene, GMP, Pest control, Allergen management, HACCP. d. Explain and Discuss the organisational health and safety policies and procedures includes fire safety, health safety, regular health check-up, Accident management etc. e. Elucidate the methods to prevent product contamination and cross contamination at the workplace. f. Describe Personal protective equipment (PPEs) in details	1. Show the various forms of Hazards e.g., Physical, chemical, biological and Allergen. 2. Show PPEs and process of wearing all PPEs. 3. Perform: Ask students to observe and Identify non-conformance within the process and plant. 4. Activity: Create Groups and ask students of one group to identify and demonstrate the non-conformances on personal hygiene to the students of another group 5. Activity: Demonstrate students to prepare process flow charts for millets composite flour, Millet's bakery products, Millets extruded products and ready to eat mixes. 6. Demonstrate the development of a rough HACCP plan for composite flour 7. QA Session 8. Viva	10	20	30	Classroom setup

4	Employability Skills	a. Introduction to ES skills b. Understand the Constitutional values and Citizenship c. Understand the basic English skills d. Explain Career Development & Goal Setting e. Understand Communication Skills, Financial and Legal Literacy, Essential Digital Skills and provide Customer Services f. Understand the basics of Entrepreneurship and Getting ready for apprenticeship & Jobs	1. Activity: Creating a constitution-based Poster on Citizenship 2. Plan practical's or activities on Team Work, Communication skills, Time Management, Problem Solving etc. 3. Demonstrate the process of creating social media accounts and how to use them effectively 4. Demonstrate the process of application of savings and current bank accounts, Process of FD/RD Creation. 5. Show them how to use job portals such as Naukri.com and LinkedIn to building professional network and finding new job opportunities. 6. QA Session	20	10	30	Classroom Setup
		Total Duration Mandatory NOS		**80**	**100**	**180**	
Elective Component (60 Hours Each)							
Elective 1 – Tentative Budget for Lab Set Up to conduct Practical duration - 6 Lacs							
5	**Elective 1 -** Product Millet Based Baked Products	a. Explain the role of different ingredients in cookie making, such as flour, sugar, butter, eggs, and leavening agents. b. Elucidate importance of accurate measuring and weighing of ingredients. c. List and explain different mixing techniques, such as creaming, beating, and folding.	**Perform at least 2 practicals on different formulations of Millets Cookies:** 1. Demonstrate methods for selecting the best ingredients and their recipe formulations 2. Demonstrate the process of premixing and Mixing of Dough 3. Demonstrate the Moulding and Shaping process 4. Demonstrate the baking of Cookies 5. Show different ways to decorate cookies	20	40	60	Mixers Moulds/Sheeter/Cutter Deck Wire cut machine Oven/Rotary Oven Packing machine Sealing machine

		d. Describe the types of equipment used in mixing dough, such as stand mixers, hand mixers, and spatulas. e. Explain the importance of consistent shaping for uniform cookies and discuss different shaping equipment and techniques, such as cookie cutters, rolling pins, and moulds for rolling, cutting, and pressing. f. Understanding the significance and learn how to preheat and use an oven for cookie baking. g. Explain the Knowledge of different baking techniques, such as baking on a sheet pan or using a baking stone. h. Familiarity with different baking temperatures and times and troubleshooting for different types of cookies. i. Describe different types of cookie decorations and decoration techniques, such as frosting, sprinkles, and edible glitter. j. Explain the quality inspection of final product including Sensory evaluation j. Describe different packaging materials and packaging techniques, such as plastic bags, tins, and boxes	6. Demonstrate the Process to pack the cookies 7. Demonstrate the Postproduction cleaning of Workplace and equipment 8. QA Session				

		k. Describe & discuss the labelling of cookies with relevant information, such as flavour and ingredients etc					
Elective 2 – Tentative Budget for Lab Set Up to conduct Practical duration - 5 Lacs							
6	**Elective 2-** Produce Millet Based Ready to Cook Products	a. Elaborate the Standard procedure on the preparation of instant food from raw material b. Describe blending machine and discuss the standard procedure to operate the machine. c. Describe the process and state the importance of inactivating the enzymes and applying the solution to the cut vegetables to prevent browning d. Explain the factors affecting the quality of the instant food products e. Explain the standard procedure and State the significance to check the quality of finished products f. Explain the process of addition of additives g. Explain the process of operating an Oven and dryer h. Explain the quality inspection of final product including Sensory evaluation i. Explain the process of packaging of Instant food premixes	**Perform at least 2 practicals on different formulations of Millet based ready to cook products:** 1. Activity: Ask candidates to draw a detailed flow chart for instant food from raw material to packaging 2. Demonstrate the Operation following SOP of each equipment. 3. Demonstrate the preparation of 2 Millet based ready to cook products using all equipment from weighing of raw materials to packaging of finished products considering all food safety and labelling guidelines. 4. QA Session	20	40	60	Blender Disintegrator Destoner Sifter Dryer Fumigation chamber
Elective 3 – Tentative Budget for Lab Set Up to conduct Practical duration - 22 Lacs							

7	**Elective 3 –** Produce Millet Based Extruded Products	a. Understand the process of mixing and kneading of dough for producing pasta and/or noodles b. Describe the process of extrusion to produce pasta c. Describe the operation of noodle making machine and elaborate belt creating, rolling, slitting, steaming & frying processes in details d. Explain the quality inspection of final product including Sensory evaluation e. Elaborate the process of packaging	**Perform at least 2 practicals on different formulations of Millet based ready to cook products:** 1. Activity: Ask candidates to draw a detailed flow chart for millet based extruded products from raw material to packaging 2. Demonstrate the operation following SOP of each equipment. 3. Measuring, weighing and mixing ingredients accurately in a bowl to form a rough dough. 4. Kneading and resting the dough by hand or with a stand mixer until it becomes smooth and elastic and become easier to work. 5. Setting up extruder and or Noodle making machine for different extruded products, demonstrating feeding and cutting the pasta and noodles for desired length. 6. Pack the pasta and noodles into appropriate packaging following labelling and packaging guidelines 7. QA Session	20	40	60	Vertical type powder mixer Dough mixer blade type Extruder Dryer machine Pasta Packaging machine Noodle making power operated machine Noodle dryer Noodle Flow wrap machine
Total Duration Elective NOS				**60**	**120**	**180**	**Passing Percentage: 70**