



Model Curriculum

QP Name: Grain Mill Operator

QP Code: FIC/Q1003

QP Version: 3.0

NSQF Level: 3

Model Curriculum Version: 3.0

FOOD INDUSTRY CAPACITY & SKILL INITIATIVE (FICSI)
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Training Parameters

Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Food Grain Milling
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2004/8273.90
Minimum Educational Qualification and Experience	1. Grade 8 pass and pursuing continuous schooling in regular school with vocational subject OR 2. 8th grade pass with 1-year of relevant experience OR 3. 5th grade pass with 4 years of relevant experience OR 4. Ability to read and write with 5 years relevant experience OR 5. Previous relevant qualification of NSQF Level 2 with 1 years of relevant experience OR 6. Previous relevant qualification of NSQF Level 2.5 with 6 months of relevant experience
Pre-Requisite License or Training	Not Applicable
Minimum Job Entry Age	18
Last Reviewed On	30/09/2021
Next review Date	29/09/2024
NSQC Approval Date	30/09/2021
QP Version	3.0
Model Curriculum Creation Date	20/07/2021
Model Curriculum Valid Upto Date	29/09/2024
Model Curriculum Version	3.0
Minimum Duration of the Course	330 Hours
Maximum Duration of the Course	330 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 learner will be able to:

- Prepare and maintain work area and process machineries for operating a grain mill
- Prepare for production of products from various grains
- Operate grain mill
- Document and maintain records related to execution of the grain milling process
- Follow food safety, hygiene and sanitation for processing food products

Compulsory Modules

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

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
FIC/N1007 Prepare and maintain work area and process machineries for operating a grain mill NOS Version No.: 2.0 NSQF Level: 3	20:00 Hours	40:00 Hours	00:00Hours	00:00Hours	60:00Hours
Module1: Introduction to the training program and Overview of Food Processing Industry	02:00 Hours	00:00 Hours	00:00Hours	00:00Hours	02:00Hours
Module 2: Prepare and maintain work area for Grain Milling Process	18:00 Hours	40:00 Hours	00:00Hours	00:00Hours	58:00Hours
FIC/N1008 Prepare for production of products from various grains NOS Version No. 2.0 NSQF Level:3	25:00 Hours	35:00 Hours	00:00Hours	00:00Hours	60:00Hours
Module 3: Carry out grain milling	25:00 Hours	35:00 Hours	00:00Hours	00:00Hours	60:00Hours

FIC/N1009: Operate Grain Mill NOS Version No.: 2.0 NSQF Level:3	40:00 Hours	80:00 Hours	00:00Hours	00:00Hours	120:00Hours
Module 4: Operate a Grain mill	40:00 Hours	80:00 Hours	00:00Hours	00:00Hours	120:00Hours
FIC/N1010: Complete documentation and record keeping related to operating a grain mill NOS Version No.: 2.0 NSQF Level:3	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00Hours
Module 5: Complete documentation and record keeping	10:00 Hours	20:00 Hours	00:00 Hours	00:00Hours	30:00Hours
FIC/N9001 Ensure Food safety, hygiene and sanitation for processing food products NOS Version No.:1.0 NSQF Level: 4	10:00 Hours	20:00 Hours	00:00 Hours	00:00Hours	30:00Hours
Module 6: Ensuring food safety, personal hygiene and workplace sanitation	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00Hours
DGT/VSQ/N0101 Employability Skills NOS Version No.: 1.0 NSQF Level: 2	12:00 Hours	18:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 7: Employability skills	12:00 Hours	18:00 Hours	00:00Hours	00:00Hours	30:00Hours
Total Duration	117:00 Hours	213:00 Hours	00:00 Hours	00:00 Hours	330:00 Hours

Module Details

Module1: Introduction to the Training Program and Overview of Food Processing Industry

Mapped to FIC/N1007, v2.0

Terminal Outcomes:

- Discuss the opportunities available to grain mill operators in food processing industry
- List the various tasks to be performed in the job

Duration: 02:00	Duration: 00:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • Describe food processing and its sub-sectors • Describe milling industry • Discuss the future trends and career growth opportunities available to milling technicians in the food processing industry. • Summarise the key roles and Responsibilities of a 'Grain mill operator'. • List the various terminologies used by Grain mill operator in the food processing industry. • Discuss the role of organisational policies and procedures in the job. 	
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Nil	

Module 2: Prepare and maintain work area for Grain Milling Process

Mapped to FIC/N1007, v2.0

Terminal Outcomes:

- Discuss the tasks to be performed to prepare for grain milling
- State the importance of maintaining tools and equipment effectively

Duration: 18:00	Duration: 40:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • State the materials and equipment used in the cleaning and maintenance of the work area. • State the common detergents and sanitizers used in cleaning work area and machineries • State the methods of cleaning and sanitization. • State different types of maintenance procedures. 	<ul style="list-style-type: none"> • Demonstrate CIP method of cleaning • Demonstrate SIP method of cleaning • Demonstrate the process of preparing the work area for scheduled production • Demonstrate how to use tools safely. • Demonstrate correct way of disposal of waste material is as per SOP. • Exhibit the work area is clean and hygienic.
Classroom Aids	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook.	
Tools, Equipment and Other Requirements	
De-stoner, Separator, De-Husker, Splitter, Whitener, Polisher, Blender, Pulverizer, Stonemill/ Roller Mill, sifter, Packaging Machines, Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual	

Module 3: Carryout grain milling

Mapped to FIC/N1008, v 2.0

Terminal Outcomes:

- List the tasks to be performed to prepare for production of several products from grains
- Demonstrate the standard practices followed in operating grain mill

Duration: 25:00	Duration: 35:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • Analyze the process flow chart. • Explain assembling of all components of machines. • List pre checks to be performed on all machineries • List the production planning process • Understand basic calculation of raw materials, manpower, packaging material etc for the entire production process • Describe preparation of raw materials required for production 	<ul style="list-style-type: none"> • Check the working and performance of each equipment. • Calculate the process time. • Plan the batch size considering full capacity utilization of machineries. • Demonstrate the weighing of raw material for each process. • Demonstrate how to plan the production process
Classroom Aids	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
Nil.	

Module 4: Operate a Grain Mill

Mapped to FIC/N1009, v2.0

Terminal Outcomes:

- Discuss the process of operating a grain mill
- Demonstrate the standard practices followed in operating a grain mill

Duration: 40:00	Duration: 80:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • Describe briefly different types of grain mill • Enlist different equipment in a grain mill setup • Describe milling of different grains • Explain packaging and storage of different types of milled grains • Describe quality parameters to be checked for the final products produced • Explain postproduction cleaning and maintenance 	<ul style="list-style-type: none"> • Execute the process of cleaning and grading of grains for milling • Perform a pre check on all machineries. • Demonstrate the working on different equipment present in a grain mill like De-stoner, separator, de-Husker, Splitter, whitener, polisher, blender, pulverizer, stone mill / roller Mill, sifter. • Demonstrate the setting of different control parameters. • Demonstrate grain milling process • Demonstrate the packaging and analyze the quality of the finished product. • Demonstrate cleaning the machineries used with recommended sanitizers following CIP(clean-in place)procedure. • Demonstrate cleaning the equipment and tools used using recommended cleaning agents and sanitizers.
Classroom Aids	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
De-stoner, Separator, De-Husker, Splitter, Whitener, Polisher, Blender, Pulverizer, Stone mill / Roller Mill, Plan sifter ,Packaging Machines, Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual	

Module5: Complete documentation and record keeping

Mapped to FIC/N1010, v2.0

Terminal Outcomes:

- Explain the methods of documenting and recording the complete details
- Demonstrate the process of documenting records effectively

Duration: 10:00	Duration: 20:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • State the need for documenting and maintaining records of raw materials, processes and finished products. • State the method of documenting and recording the details of raw material to final finished product. 	<ul style="list-style-type: none"> • Demonstrate the process of documenting records of production plan, process parameters, and finished products. • Document daily records in the ERP system effectively. • Demonstrate the process to maintain various records.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
Food Safety Manual, Log Books.	

Module 6: Ensuring food safety, personal hygiene and work place sanitation

Mapped to FIC/N9001, v1.0

Terminal Outcomes:

- Perform safety and sanitation related functions for processing food products.
- Apply food safety practices for processing food products.

Duration: 10:00	Duration: 20:00
Theory–Key Learning Outcomes	Practical–Key Learning Outcomes
<ul style="list-style-type: none"> • Define hazards and risks. • Explain different types of hazards • Discuss the organizational health and safety policies and procedures. • State the importance of safety, hygiene and sanitation in the food industry. • Discuss GMP and GHP. • Describe HACCP 	<ul style="list-style-type: none"> • Apply the industry standards to maintain a safe and hygiene workplace. • Apply HACCP principles to eliminate food safety hazards in the process and products. • Apply safety practices in the work area.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator’s Guide, Participant’s Handbook	
Tools, Equipment and Other Requirements	
Protective Gloves, HeadCaps, Aprons, SafetyGoggles, SafetyBoots, MouthCovers, Sanitizer, Safety Manual, Log Books etc.	

Module 7: Employability skills

Mapped to DGT/VSQ/N0101, v 1.0

Terminal Outcomes:

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

Duration: 12:00	Duration: 18:00
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 traits of effective time managers • Discuss tips for stress management • 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. • 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 camp 	<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 the procedure to apply for bank finances • Demonstrate on how to identify new business opportunities • Prepare a business plan and Detailed Project report (DPR) • 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. • Prepare a detailed sample report consisting of information such as future investments, forecasting, business expansion, etc. • Demonstrate the procedure to conduct an entrepreneurial program for exploring business opportunities and increasing the clientele. • Demonstrate how you will sell a product or service on an e-commerce platform with integration of payment gateway • Demonstrate a case study of a successful entrepreneur

Classroom Aids:

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

Tools, Equipment and Other Requirements

NIL

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
M.Sc/M.Tech/ME	Food Technology or Food Engineering	2	Grain Milling	1	Training of Grain mill operator	
B.Sc or graduate/B.Tech/BE	Food Technology or Food Engineering	3	Grain Milling	1	Training of Grain mill operator	
B.SC	Food science and quality control	4	Grain Milling	1	Training of Grain mill operator	
Diploma	Food Technology or Food Engineering	4	Grain Milling	1	Training of Grain mill operator	
B.sc	Home science	5	Grain Milling	1	Training of Grain mill operator	
Diploma/certificate course	Grain Milling	5	Grain Milling	1	Training of Grain mill operator	

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Grain mill operator" mapped to QP:"FIC/Q1003,v3.0".Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack:"MEP/Q0102".Minimum acceptedscoreis80%asperFICSI guidelines.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
B.Tech/B.E./B.Voc Food Technology/ Food Engineering/Crop Processing/Milling Processing	Food Technology or Food Engineering/Biotechnology/Home science	2	Grain Milling	2	Assessment of Grain mill operator	

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Grain mill operator" mapped to QP:"FIC/Q1003,v3.0".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. ThereineachPerformanceCriteria in the NOS will be assigned marks for theory and/or practical based on relative importance and criticality of function.

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

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

- i. Written Test: This will comprise of (i) True /False Statements (ii) Multiple Choice Questions (iii) Matching Type Questions. Online system for this will be preferred.
- ii. Practical Test: This will comprise a test job to be prepared as per project briefing following appropriate working steps, using necessary tools, equipment and instruments. Through observation it will be possible to ascertain candidate's aptitude, attention to details, quality consciousness etc. The end product will be measured against the pre-decided MCQ filled by the Assessor to gauge the level of his skill achievements.
- iii. Structured Interview: This tool will be used to assess the conceptual understanding and the behavioural aspects as regards the job role and the specific task at hand.

Glossary

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

Grain Mill Operator

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
CIP	Clean-In Place