



Model Curriculum

QP Name: Grain Mill Operator
QP Code: FIC/Q1003

QP Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

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Training Parameters

Sector	Food Processing
Sub-Sector	Grain Mill Operator
Occupation	Processing
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2004/ 8273.90
Minimum Educational Qualification and Experience	1. Class 12th passed 2. Class 10th passed and 1 year course in relevant stream 3. Class 10th passed and 2 years of relevant experience 4. Class 10th pass and 2 years of ITI 5. Class 10th pass and 1 year of ITI in relevant stream
Pre-Requisite License or Training	Not Applicable
Minimum Job Entry Age	18
Last Reviewed On	04/09/2018
Next Review Date	24/09/2021
NSQC Approval Date	NA
QP Version	1.0
Model Curriculum Creation Date	20/04/2021
Model Curriculum Valid Up to Date	20/04/2026
Model Curriculum Version	1.0
Minimum Duration of the Course	340 Hours
Maximum Duration of the Course	340 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 operation 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
Bridge Module	42:00 Hours	32:00 Hours	00:00 Hours	00:00 Hours	74:00 Hours
Module 1: Introduction to the training program and Overview of Food Processing Industry	02:00 Hours	00:00 Hours	00:00 Hours	00:00 Hours	02:00 Hours
Module 2: Organizational Standards and Norms	06:00 Hours	10:00 Hours	00:00 Hours	00:00 Hours	16:00 Hours
Module 3: Professional and Core Skills	06:00 Hours	10:00 Hours	00:00 Hours	00:00 Hours	16:00 Hours
Module 10: Employability and Entrepreneurship skills	28:00 Hours	12:00 Hours	00:00 Hours	00:00 Hours	40:00 Hours
FIC/N1007 Prepare and Maintain Work Area and Process Machineries for Operating a Grain Mill NOS Version No.: 1.0 NSQF Level: 4	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 4: Prepare and maintain work area for Grain Milling Process	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
FIC/N1008 Prepare for Production of Products From Various Grains NOS Version No.1.0 NSQF Level:4	25:00 Hours	35:00 Hours	00:00 Hours	00:00 Hours	60:00 Hours
Module 5: Carry out	25:00	35:00	00:00 Hours	00:00 Hours	60:00 Hours

grain milling	Hours	Hours			
FIC/N1009: Operate a Grain Mill NOS Version No.: 1.0 NSQF Level: 4	27:00 Hours	50:00 Hours	00:00 Hours	00:00 Hours	77:00 Hours
Module 6: Operate a grain mill	27:00 Hours	50:00 Hours	00:00 Hours	00:00 Hours	77:00 Hours
FIC/N1010: Complete documentation and record keeping NOS Version No.: 1.0 NSQF Level: 4	21:00 Hours	28:00 Hours	00:00 Hours	00:00 Hours	49:00 Hours
Module 7: Complete documentation and record keeping	13:00 Hours	13:00 Hours	00:00 Hours	00:00 Hours	26:00 Hours
Module 8: IT Orientation	08:00 Hours	15:00 Hours	00:00 Hours	00:00 Hours	23:00 Hours
FIC/N9001 Food safety, hygiene and sanitation for processing food products NOS Version No.: 1.0 NSQF Level: 4	15:00 Hours	35:00 Hours	00:00 Hours	00:00 Hours	50:00 Hours
Module 9: Ensuring food safety, personal hygiene and workplace sanitation	15:00 Hours	35:00 Hours	00:00 Hours	00:00 Hours	50:00 Hours
Total Duration	140:00 Hours	200:00 Hours	00:00 Hours	00:00 Hours	340:00 Hours

Module Details

Module 1: Introduction to the Training Program and Overview of Food Processing Industry

Bridge Module

Terminal Outcomes:

- Discuss the opportunities available for Grain mill operator in food processing industry
- List the GMP and HACCP practices and FSSAI guidelines applicable in

Duration: 02:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • 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. • List the sequence of tasks performed by Grain mill operator. <p>Discuss the impact of not following Good Manufacturing Practices (GMP), Hazard Critical Analysis and Control Points (HACCP) and Food Safety and Standards Authority of India (FSSAI) guidelines in food processing.</p>	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Nil	

Module 2: Organizational standards and norms

Bridge Module

Terminal Outcomes:

- Discuss the roles and responsibilities of a Grain mill operator
- Describe importance of personal hygiene and sanitation

Duration: 06:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe how to conduct yourself at the workplace. • Describe the personal hygiene and sanitation guidelines to be followed at the workplace. 	<ul style="list-style-type: none"> • Demonstrate how to conduct yourself at the workplace. • Demonstrate the procedure to be followed to implement personal hygiene and sanitation guidelines at the workplace.
Classroom Aids:	
Laptop, white board, marker, chart papers, projector, trainer's guide and student handbook, protective gloves, head caps, aprons, safety goggles, safety boots, mouth masks, sanitizer, safety manual	
Tools, Equipment and Other Requirements	
Nil.	

Module 3: Professional and Core Skills

Bridge Module

Terminal Outcomes:

- Discuss the attributes of desirable professional behaviour
- Demonstrate the standard measures undertaken for working effectively

Duration: 06:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Identify personal strengths and weaknesses. • Discuss the importance of work order in the process. • State the importance of decision making in the job. • State the importance of communicating effectively. 	<ul style="list-style-type: none"> • Apply standard practice to undertake a self-assessment test for identifying strengths and weaknesses. • Plan and prioritise tasks effectively to ensure timely completion. • Demonstrate the ways to analyse situations for identifying problems and making sound decision promptly.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Gloves, hair net, shoe cover, soap dispenser, hand sanitizer, ear plugs, masks, aprons/lab coats eye protection, hard hats, gloves, rubber boots, etc.	

Module 4: Preparation and Maintenance of Work Area and Process Machineries for Operating a Grain Mill

Mapped to NOS/N1007, v 1.0

Terminal Outcomes:

- Discuss the tasks to be performed by grain mill operator to prepare and maintain the work area
- State the importance of maintaining tools and equipment effectively

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Check if the work area is cleaned using approved sanitizers. • Describe the importance of cleanliness of the work area. • Check if the work area is safe and hygienic for food production. • Check the working and performance of all machineries and tools used for milling. • Check if the equipment are washed with approved sanitizers. • 	<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, PowerPoint 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, sifter, Packaging Machines, Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual	

Module 5: Prepare for Production of Products from Various Grains

Mapped to NOS/ FIC/N1008, v 1.0

Terminal Outcomes:

- Discuss the process of producing 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 chat. 	<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, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Nil.	

Module 6: Operate a Grain Mill

Mapped to NOS/ FIC/N1009, v 1.0

Terminal Outcomes:

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

Duration: 27:00	Duration: 50:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain assembling of all components of machines. • List pre checks to be performed on all machineries. • Discuss the importance of cleaning the equipment and tools used using recommended cleaning agents and sanitizers. 	<ul style="list-style-type: none"> • Perform a check if all the machineries are clean and in good working conditions. • Demonstrate assembling of all components of machines. • 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 the packaging and analyze the quality of the finished product. • Demonstrate cleaning the machineries used with recommended sanitizers following CIP (clean-inplace) procedure. • Demonstrate cleaning the equipment and tools used using recommended cleaning agents and sanitizers.
Classroom Aids	
Computer, Projection Equipment, PowerPoint 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, Plansifter, Packaging Machines, Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual	

Module 7: Complete documentation and record keeping related to operating a grain mill

Mapped to FIC/N1010, v 1.0

Terminal Outcomes:

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

Duration: 13:00	Duration: 13:00
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, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Food Safety Manual, Log Books.	

Module 8: IT orientation

Bridge Module

Terminal Outcomes:

- List the parts of a computer
- Demonstrate the effective use of data recording applications at the workplace

Duration: 08:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the various parts of a computer. • Describe the functions of different computer devices. • List the various applications used in recording information. 	<ul style="list-style-type: none"> • Demonstrate the standard techniques used to operate a computer. • Show how to use an ERP software for recording information. • Demonstrate the effective use of applications such as word processor and spreadsheets.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Computer/laptop.	

Module 9: Ensuring food safety, personal hygiene and workplace sanitation

Mapped to FIC/N9001, v 1.0

Terminal Outcomes:

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

Duration: 15:00	Duration: 35:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Define hazards and risks. • Recall the various types of health and safety equipment available in an organisation and the methods for obtaining them. • Discuss the organisational health and safety policies and procedures. • State the importance of safety, hygiene and sanitation in the food industry. • Discuss the importance of sanitising self and the work area safely and appropriately. • Recall the ways to store the sanitising materials appropriately. 	<ul style="list-style-type: none"> • 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, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Covers, Sanitizer, Safety Manual, Log Books etc.	

Module 10 : Employability and Entrepreneurship skills

Bridge Module

Terminal Outcomes:

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

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

<ul style="list-style-type: none"> • Understand the importance of entrepreneurship • Describe the traits of successful entrepreneur • List the types of enterprises • Understand the importance of effective speaking and listening • Discuss the importance of problem solving • Discuss how to deal with failures • Describe the core keys of marketing • Discuss ways to manage risks at workplace 	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint 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, v1.0". Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/Q0102". Minimum accepted score is 80 % as per FICSI 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	4	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, 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.

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, as well as the selected elective NOS/set of NOS. OR
4. Assessment will be conducted for all compulsory NOS, as well as the selected optional NOS/set of NOS.
5. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
6. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
7. To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
8. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pac

References

Glossary

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

Acronyms and Abbreviations

Term	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
CIP	Clean In Place
COP	Clean Out Of Place
ERP	Enterprise Resource Planning
FIFO	First In First Out
EFO	First Expiry First Out
FSSAI	Food Safety and Standards Authority of India
GMP	Good Manufacturing Practice
GHP	Good Hygiene Practices
HACCP	Hazard Analysis and Critical Control Point
NOS	National Occupational Standard
NSQF	National Skill Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standard
PC	Performance Criteria
QP	Qualification Pack
SSC	Sector Skill Council
SOP	Standard Operating Procedure
QMS	Quality Management System