

Syllabus for Food Production Supervisor - Cereal Grains and Pulses Milling

Course Name	Food Production Supervisor - Cereal Grains and Pulses Milling
Sector	FOOD PROCESSING
Course Code	FPT/2024/FGPM/277
Level	4
Occupation	Food Production Supervisor - Cereal Grains and Pulses Milling
Job Description	A Food Production Supervisor - Cereal Grains and Pulses Milling performs tasks such as handling and operating grain and pulse milling equipment on the production line, cleaning up equipment, and maintaining the workplace according to the instructions of the company, specific requirements.
Course Duration	Total Duration 450 Hrs (T- 120 Hrs, P- 210 Hrs , OJT-60 Hrs and ES-60 Hrs)
Trainees' Entry Qualification	<ul style="list-style-type: none"> • 12th grade pass • Completed 2nd year of 3-year diploma (after 10th) • Pursuing 2nd year of 3-year regular Diploma (after 10th) <ul style="list-style-type: none"> • 10th grade pass with two years of any combination of NTC/NAC/CITS or equivalent. <ul style="list-style-type: none"> • 8th pass plus 2-year NTC plus 1-Year NAC plus 1-Year CITS • 10th grade pass and pursuing continuous schooling (for 2-year program) <ul style="list-style-type: none"> • 11th Grade Pass and pursuing continuous schooling • Previous relevant Qualification of NSQF Level 3.0 with minimum education as 8th Grade pass with 3-year relevant experience • Previous relevant Qualification of NSQF Level 3.5 with 1.5-year relevant experience
Trainers Qualification	Degree in Food Technology from UGC recognized university/ college with one year experience in relevant industry. OR Diploma in Food Technology from recognized board with two years' experience in relevant industry. OR NTC/NAC Passed in the trade of "Agro Processing" with three years' experience in relevant Field.

Structure of Course:

Module No.	Module name	Outcome	Theory (Hrs)	Practical (Hrs)	Total (Hrs)
1	Overview of food processing industry	Describe the food processing industry, its sub-sectors along with the roles and responsibilities of a Food grains and pulses milling Technician.	10	20	30
2	Food Grain Milling Operation	Oversee rice and wheat milling operations, ensuring quality control through monitoring and adjusting various process parameters in grain processing.	20	40	60
3	Pulses Milling	Manage pulse milling operations, including	20	40	60

Module No.	Module name	Outcome	Theory (Hrs)	Practical (Hrs)	Total (Hrs)
	operation	cleaning equipment, organizing raw materials, ensuring quality through inspections and tests, controlling processing parameters, and handling rejects and waste.			
4	Finished products packaging and sealing procedure	Demonstrate packaging/bagging process of finished products along with proper labeling	20	40	60
5	Postproduction cleaning operation	Supervise postproduction cleaning operations by using appropriate tools and equipment	10	20	30
6	Food safety and hygiene	Ensure Food safety with focus on waste disposal and pest control	30	30	60
7	Safe Working Practices	Work effectively at workplace following safe and ethical working practices and good customer relationship.	10	20	30
8	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	--	60	60
9	Employability Skill	As per guided curriculum	60	--	60
TOTAL:			180	270	450

SYLLABUS:

Module 1: Overview of food processing industry

Outcome:

Describe the food processing industry, its sub-sectors along with the roles and responsibilities of a Food Grains and Pulses Milling Technician

Theory Content:

- Discuss about the food processing industry and food grain and pulses milling sub-sector in brief
- study the economic advantage of food grain and pulses milling industry in India.
- Analyse the Indian market of food grain and pulses milling industry.
- Elaborate the career opportunities available to a milling Technician in the food processing industry.
- Explain the terminologies used food grain and pulses milling process.
- List the sequence of operations to be performed in the job.
- Outline roles and responsibilities and safety procedures in food grain and pulses milling industry
- State the food safety hygiene standards to follow in a work environment.

Practical Content:

- Demonstrate category of food grain and pulses milling sub-sector like Rice milling, wheat milling, corn milling, barley milling, sorghum milling, millets milling, pulse milling.
- Conduct the sequence of operations to be performed in the job.
- Determine the terminologies used food grain and pulses milling process.
- Evaluate job opportunities in different food grain and pulses milling sub-sector.

- Highlight roles and responsibilities and safety matter in different food grain and pulses milling sub-sector.

Tools, Equipment and Other Requirements:

Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual, food grain and pulses milling manual

Module 2: Food Grain Milling Operation

Outcome:

Oversee rice and wheat milling operations, ensuring quality control through monitoring and adjusting various process parameters in grain processing.

Theory Content:

- Clean and change screens/sieves in process machineries (as applicable) following SOP for milling of different types of grains (rice, wheat)
- Organize grains from warehouses and maintain enough stock to meet weekly production requirement.
- Check the quality of incoming raw materials through physical parameters like appearance, colour, visual defects, odour, infestation etc.
- Ensure implementation of pest control for warehouse, loading and unloading area, process and storage area etc.
- Elaborate the use of dryer to maintain required moisture in grains.
- Illustrate grading of grains as per the desired size.
- Discuss types of rice mill; huller mill, sheller-cum-cone polisher mill.
- Describe Modern rice milling unit operation and function of milling machines (Pre-Cleaner – Rubber Roll Husker – Husk Aspiration- Paddy Separator – De Stoner – Abrasive Whitener – Friction Whitener – Sifter – Mist Polisher – length grader – Head Rice Bin – Bagging)
- Highlight by-product obtained during rice milling operation- rice bran, rice husk, broken rice.
- Explain Rice parboiling methods, CFTRI process of parboiling, changes during parboiling, advantages and disadvantages of parboiling.
- Elaborate FSSAI standard of cereals, classification of rice (Long slender, Long Bold, Medium slender, Short slender, Short bold), Grades of rice,)
- Discuss Types of wheat, conditioning and tempering process of wheat before milling.
- Outline various steps of Wheat milling operation: Brake system, purification system and reduction system;
- Explain types and grades of wheat flour, Quality characteristics of wheat flour.
- Elaborate proper lubrication of machine parts with food grade lubricants
- Analyze of cereal grain (Physiochemical examination such as percentage of Broken grains, foreign matter, Infested Damaged Kernels, Karnal bunt, Ergot, Filth, moisture content, uric acid, Aflatoxin).

Practical Content:

- Guide on procedure of installing the magnets.
- Demonstrate lubrication of machine parts with food grade lubricants
- Maintain flow rate of material by gear of rpm motor attached with chain conveyor
- Exemplify cleaning and inspection of grains based on size and grade
- Exhibit how to inspect fumigated raw material for absence of any live infestation in it.
- Show how to transfer the grains to the de-stoner machine to remove stones and prepare the grains for washing

- Demonstrate rice, wheat milling operation.
- Monitor and control process parameters like flow rate/intake of raw materials, oil, water temperature, pressure, process time etc
- condition/soaking, tempering of grains like paddy (rice), wheat etc
- Monitor process parameters like raw material flow rate, speed, time etc of rice processing machines like paddy husker, paddy separator, whitener, sifter, polisher, length grader,
- Adjust temperature, pressure, and speed of dryer.
- Collect in-process samples and transfer to quality lab for analysis.
- Conducts laboratory tests like grain moisture content to monitor product quality during processing.
- Collect machine rejects and waste generated from each operational process

Tools, Equipment, and Other Requirements

Automatic measuring scales, magnets, screw, or chain conveyor, blowers or suction fan, separator, aspirator, screens, and sieves, de-stoner machine, water bath, dryer, dehusker, sheller-cum-cone polisher mill, mini modern rice milling machine, wheat flour milling machine.

Module 3: Pulses Milling Operation

Outcome:

Manage pulse milling operations, including cleaning equipment, organizing raw materials, ensuring quality through inspections and tests, controlling processing parameters, and handling rejects and waste.

Theory Content:

- Explain cleaning process machineries with recommended method following SOP.
- Classify of Pulses and legumes (Bean: broad bean, field bean, haricot bean, shell bean, lima bean, moth bean, soyabean, pulses: pigeon pea, green gram, Bengal gram, black gram, lathyrus, lentil, Peas: whole peas, cow pea).
- Describe nutrient composition of different pulses, nutritional value and anti-nutritional compounds in pulses and Legumes.
- Elaborate Pre-treatment of pulses for milling (Pre-treatment in dal milling like cleaning, grading, soaking, and drying.)
- Outline modern Pulse milling method: Dry milling and wet milling of pulses for production of dal.
- Explain factors affecting milling quality and quantity.
- Elucidate cleaning and inspection for effective grading and sieving of grains based on size and grade.
- Utilized of by-products from dal mills - composition and nutritional value, consumption.
- Analyze of pulses (Physiochemical examination such as percentage of Broken pulses, foreign matter, Infested Damaged Kernels, split pulses, live insect, moisture content, uric acid, Aflatoxin).

Practical Content:

- Clean and change screens/sieves in process machineries (as applicable) following SOP for milling different types of pulses.
- Clean and lubricate equipment on regular or need basis, following the maintenance specifications

of the Organization.

- Organize pulses from warehouses and maintain enough stock to meet weekly production requirement.
- Receive raw materials from external or internal warehouse as per requirement.
- Check the quality of incoming raw materials through physical parameters like appearance, colour, visual defects, odor, infestation etc.
- Ensure implementation of pest control for warehouse, loading and unloading area, process and storage area etc.
- Demonstrate Pre-treatment in pulse milling like cleaning, grading, soaking, and drying.
- Demonstrate Dry milling and wet milling of pulses for production of dal.
- Control and maintain process parameters like material flow rate, speed, time etc of pulse processing machines
- Collect in-process samples and transfer to quality lab for analysis.
- Conducts in-process tests like pulse moisture content to monitor product quality during processing.
- Examine such as percentage of Broken pulses, foreign matter, Damaged pulses, Weevilled seed, Infested Damaged Kernels, split pulses, other edible grain, live insect, moisture content, uric acid, Aflatoxin.
- Collect machine rejects and waste generated from each operational process of pulse milling.

Tools, Equipment, and Other Requirements

Automatic measuring scales, magnets, blowers or suction fan, separator, aspirator, screens, and sieves, de-stoner machine, water bath, dryer, mini dal milling machine,

Module 4: Finished products packaging and sealing procedure

Outcome:

Demonstrate packaging/bagging process of finished products along with proper labeling

Theory Content:

- Discuss on basic functions of packaging; Different forms of packaging - Rigid, semirigid and flexible, Primary, secondary and tertiary.
- Explain Primary Packaging Materials (Paper and paper-based packaging materials, Plastic as packaging materials), & Secondary Packaging Material (Folding carton); Transport packaging materials (jute bag).
- Discuss on Different types of packaging materials – Polymer, paper, jute bag -merits and demerits and uses.
- Discuss on Cellulosic and Polymeric packaging materials and forms: Food grade polymeric packaging materials,. Films: Multilayer films, Laminates .
- Concept of Packaging equipment – Form-fill-seal machine (Horizontal and vertical), Filling equipments, Sealing machine. labelling equipments.

Practical Content:

- Identify appropriate primary and secondary packaging material for specific products.

- Demonstrate Loading packing materials in packaging/bagging machine and set packing quantity, set date coding machine for date code details like batch number, date of manufacture, date of expiry etc
- Demonstrate automatic packaging/bagging machine to fill and seal (or) form, fill and seal measured quantity of finished products.
- check weight of packed/bagged product periodically to ensure its conformance to standards.
- Place packed and labelled products in cartons/other secondary packaging material and seal, transfer to storage area and store.
- Clean the packaging area, packaging machineries, equipment and tools using recommended cleaning agents and sanitizers.
- Document and maintain records on the finished products details like batch number, time of packing, date of manufacture, date of expiry, other label details, primary, secondary and tertiary packaging materials for all finished products, storage conditions etc, as per organization standards.

Tools, Equipment and Other Requirements

Different Types of Packaging Material, Conveyor, Hopper, Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Safety Manual, Packing Rolls, Shrink Packing Machine, Vacuum Packing Machine, Labeler, Sealer, Wrapping Machine, Form-fill-seal machine (Horizontal and vertical), Filling equipments, Sealing machine. bag filling machine, labelling equipments.

Module 5: Postproduction cleaning operation

Outcome:

Supervise postproduction cleaning operations by using appropriate tools and equipment

Theory Content:

- Describe common detergents and sanitizers employed for cleaning work areas and machinery.
- Articulate the methods employed for cleaning and sanitization.
- Enumerate the necessary tasks to be completed before commencing production.
- Enumerate the materials and equipment utilized in the cleaning and maintenance of work areas.

Practical Content:

- Identify various ingredients used in food grain and pulses processing operations.
- Identify common detergents and sanitizers employed for cleaning work areas and machinery.
- Supervise the cleaning and sanitization of food grain and pulses processing equipment and tools.
- Examine microbial contamination in different food grain and pulses processing equipment and tools during cleaning.
- Perform proper sanitization of food grain and pulses processing equipment and tools.
- Conduct a thorough inspection to ensure all machinery is clean and in optimal working condition.

Tools, Equipment and Other Requirements:

Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, detergent,

cleaning agent, hot water, fumigant, Food Safety Manual, hygiene guideline.

Module 6: Food safety and hygiene

Outcome:

Ensure Food safety with focus on waste disposal and pest control

Theory Content:

- Principles of Food Hygiene- Objectives · Scope, use and definitions
- Define the terms food safety, food poisoning, food-borne illness, food allergy, contamination, hazard.
- Food safety issues and strategies [concept of food safety and standards (FSSAI)], factors affecting shelf life and methods to check the shelf life.
- personal hygiene of food handlers.
- Method of cleaning and disinfection, sanitation methods, waste disposal strategy (solid and liquid waste) and pest control.

Practical Content:

- Illustrate the terms food safety, food poisoning, food-borne illness, food allergy, contamination, hazard and HACCP.
- Demonstrate Food safety issues and strategies [concept of food safety and standards (FSSAI)], factors affecting food safety, importance of safe foods, factors affecting shelf life and methods to check the shelf life.
- Identify Factors contributing to physical, chemical and biological contamination in food chain, definition and regulation of food sanitation, sources of contamination.
- Maintain personal hygiene of food handlers.
- Supervise cleaning, disinfection, Waste disposal (solid and liquid waste) and pest control.

Tools, Equipment and Other Requirements:

Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, detergent, cleaning agent, hot water, fumigant, Food Safety Manual, hygiene guideline.

Module No. 7: Safe Working Practices

Outcome: Work effectively at workplace following safe and ethical working practices and good customer relationship.

Theory Content:

7.1 State the importance of work ethics and workplace etiquette.

7.2 Study & discuss the common reasons for interpersonal conflict and ways of managing them effectively. And the importance of following organizational guidelines for dress code, time schedules, language usage and other behavioural aspects.

7.3 Explain the common workplace guidelines and legal requirements on non-disclosure and confidentiality of business-sensitive information.

7.4 Describe the concept of waste management and methods of disposing hazardous waste.

7.5 Explain various warning and safety signs & describe different ways of preventing accidents at the workplace.

7.6 Explain the organizational safety procedures for maintaining electrical safety, handling tools and hazardous materials

Practical Content:

- 7.1 Develop a sample plan to achieve organizational goals and targets.
- 7.2 Role-play to demonstrate the use of professional language and behaviour that is respectful to all genders.
- 7.3 Apply organizational protocol on data confidentiality and sharing only with the authorized personnel.
- 7.4 Demonstrate the use of protective equipment suitable as per tasks and work conditions.
- 7.5 Prepare a report to inform the relevant authorities about any abnormal situation/behaviour of any equipment/system.
- 7.6 Demonstrate the steps to free a person from electrocution safely.
- 7.7 Demonstrate the application of defined emergency procedures such as raising alarm, moving injured people, etc.

Tools & Equipment needed: Sample of Escalation Matrix, Organization Structure, Personal Protection Equipment, Safety Cotton Gloves, Safety Footwear, Warning Signs and Tape, First Aid Kit.

Module 8: OJT

Outcome:

Work in real job situation with special emphasis on basic safety and hazards in this domain

Practical Content:

Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 60 Hours.)

Module 9: Employability Skills

Key Learning Outcomes

Introduction to Employability Skills

Duration: 1.5 Hours

After completing this programme, participants will be able to:

- 1. Discuss the Employability Skills required for jobs in various industries
- 2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship

Duration: 1.5 Hours

- 3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen

4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century

Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills

Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

Career Development & Goal Setting

Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills

Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion

Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy

Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills

Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship

Duration: 7 Hours

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

Customer Service

Duration: 5 Hours

30. Describe the significance of analyzing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting Ready for apprenticeship & Jobs

Duration: 8 Hours

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

Learning Outcome – Assessment Criteria

Module No.	Outcome	Assessment Criteria
1	Describe the food processing industry, its sub-sectors along with the roles and responsibilities of a Food grains and pulses milling Technician	<p>After completion of this module students will be able to:</p> <p>1.1 Identify category of food grain and pulses milling sub-sector like Rice milling, wheat milling, corn milling, barley milling , sorghum milling, millets milling, pulse milling.</p> <p>1.2 Identify the economic advantage of food grain and pulses milling industry in India.</p> <p>1.3 Conduct the sequence of operations to be performed in the job.</p> <p>1.4 Identify the terminologies used food grain and pulses milling process.</p> <p>1.5 Identify job opportunities in different food grain and pulses milling sub-sector.</p> <p>1.6 Demonstrate roles and responsibilities and safety matter in different food grain and pulses milling sub-sector.</p>
2	Oversee rice and wheat milling operations, ensuring quality control through monitoring and adjusting various process parameters in grain	<p>After completion of this module students will be able to:</p> <p>2.1 Identify controls of automatic measuring scales</p> <p>2.2 Install the magnets.</p> <p>2.3 Apply lubrication of machine parts with food</p>

Module No.	Outcome	Assessment Criteria
	processing.	<p>grade lubricants</p> <p>2.4 Maintain flow rate of material by gear of rpm motor attached with chain conveyor</p> <p>2.5 Clean and inspect of grains based on size and grade</p> <p>2.6 Perform maintenance of process machines in case of breakdown/ non confirmatory or emergency with proper approval</p> <p>2.7 Check the working condition of sensors.</p> <p>2.8 Inspect fumigated raw material for absence of any live infestation in it.</p> <p>2.9 Transfer the grains to the de-stoner machine to remove stones and prepare the grains for washing</p> <p>2.10 Perform rice, wheat, corn, barley, sorghum, millets milling operation</p> <p>2.11 Identify process parameters like flow rate/intake of raw materials, oil, water to maintain moisture content or oil content, temperature, pressure, process time etc for steaming (or) condition/soaking , tempering of grains like paddy (rice), wheat etc</p> <p>2.12 Identify process parameters like raw material flow rate, speed, time etc of rice processing machines like paddy husker, paddy separator, whitener, sifter, polisher, length grader, blender machine to remove husk and produce brown rice, separate unhusked paddy from brown rice, remove bran and germ from brown rice, remove impurities and broken, improve appearance of rice, , blend rice of various grades to meet customer and legal requirement.</p> <p>2.13 Demonstrate wheat milling operation: Brake system, purification system and reduction system.</p> <p>2.15 Control and maintain process parameters like material flow rate, speed, rotation, time, moisture content etc of wheat processing machineries</p> <p>2.16 Adjust temperature, pressure, and speed of dryer.</p> <p>2.17 Collect process samples and transfer to quality lab for analysis.</p> <p>2.18 Conduct laboratory tests like grain moisture content to monitor product quality during processing.</p> <p>2.19 Collect machine rejects and waste generated from each operational process</p>

Module No.	Outcome	Assessment Criteria
3	Manage pulse milling operations, including cleaning equipment, organizing raw materials, ensuring quality through inspections and tests, controlling processing parameters, and handling rejects and waste.	<p>After completion of this module students will be able to:</p> <p>3.1 Clean and change screens/sieves in process machineries (as applicable) following SOP for milling different types of pulses.</p> <p>3.2 Maintain enough stock to meet weekly production requirement.</p> <p>3.3 Receive raw materials from external or internal warehouse as per requirement.</p> <p>3.4 Check the quality of incoming raw materials through physical parameters like appearance, colour, visual defects, odor, infestation etc.</p> <p>3.5 Select pest control method for warehouse, loading and unloading area, process and storage area etc.</p> <p>3.6 Apply Pre-treatment in pulse milling like cleaning, grading, soaking, and drying.</p> <p>3.7 perform Dry milling and wet milling of pulses for production of dal.</p> <p>3.8 Demonstrate process parameters like material flow rate, speed, time etc of pulse processing machines</p> <p>3.9 Collect process samples and transfer to quality lab for analysis.</p> <p>3.10. Examine such as percentage of Broken pulses, foreign matter, Infested Damaged Kernels, split pulses, live insect, moisture content, uric acid, Aflatoxin.</p> <p>3.11 Collect machine rejects and waste generated from each operational process of pulse milling.</p>
4	Demonstrate packaging/bagging process of finished products along with proper labeling	<p>After completion of this module students will be able to:</p> <p>4.1 Identify appropriate primary and secondary packaging material for specific products.</p> <p>4.2 Demonstrate Load packing of materials in packaging/bagging machine and set packing quantity, set date coding machine for date code details like batch number, date of manufacture, date of expiry etc</p> <p>4.3 Demonstrate automatic packaging/bagging machine to fill and seal (or) form, fill and seal measured quantity of finished products.</p>

Module No.	Outcome	Assessment Criteria
		<p>4.4 Check weight of packed/bagged product periodically afterward transfer it to quality lab for analysis to ensure its conformance to quality Standards.</p> <p>4.5 Place packed and labelled products in cartons/other secondary packaging material and seal, transfer to storage area and store.</p> <p>4.6 Clean the packaging area, packaging machineries, equipment and tools using recommended cleaning agents and sanitizers.</p> <p>4.7 Maintain records on the finished products details like batch number, time of packing, date of manufacture, date of expiry, primary, secondary and tertiary packaging materials for all finished products, storage conditions etc, as per organisation standards.</p>
5	Supervise postproduction cleaning operations by using appropriate tools and equipment	<p>After completion of this module students will be able to:</p> <p>5.1 Identify various ingredients used in food grain and pulses processing operations.</p> <p>5.2 Identify common detergents and sanitizers employed for cleaning work areas and machinery.</p> <p>5.3 Perform cleaning and sanitization of food grain and pulses processing equipment and tools.</p> <p>5.4 Check for microbial contamination in different food grain and pulses processing equipment and tools during cleaning.</p> <p>5.5 Perform proper sanitization of food grain and pulses processing equipment and tools.</p> <p>5.6 Conduct a thorough inspection to ensure all machinery is clean and in optimal working condition.</p>
6	Ensure Food safety with focus on waste disposal and pest control	<p>After completion of this module students will be able to:</p> <p>6.2 Illustrate the terms food safety, food poisoning, food-borne illness, food allergy, contamination, hazard and HACCP.</p> <p>6.2 Demonstrate Food safety issues and strategies [concept of food safety and standards (FSSAI)], factors affecting food safety, importance of safe foods, factors affecting shelf life and methods to check the shelf life.</p> <p>6.3 Identify Factors contributing to physical, chemical and biological contamination in food chain, prevention and control of food borne hazards, definition and regulation of food sanitation, sources of contamination.</p>

Module No.	Outcome	Assessment Criteria
		6.4 Maintain personal hygiene of food handlers. 6.5 Apply the Method of cleaning and disinfection, waste disposal strategy (solid and liquid waste) and pest control.
7	OJT	Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 60 Hours.)
8	Employability Skill	As per guided curriculum

List of Tools, Equipment & materials needed for 30 Trainees (Practical)

SI No	Items Name	Specification	Qty
1	Digital measuring scales	Weighing Capacity 60kg to 300kg Use Business, Industrial Accuracy 10-50 g	1
2	magnets	magnets	1
3	blowers or suction fan	Air flow (capacity) range : 100 CMH to 700000 CMH Motor Kw : up to 400 Static Pressure Range : 10 mm WC to 150 mm WC Material Of Construction : Mild Steel, Stainless Steel RPM variation : 300 to 2500	1
4	screens, and sieves		1
5	de-stoner machine	Capacity 50 kg Per Hour on wheat based Operation Mode Automatic Electricity Connection Three Phase Motor Power 9 H.P. Surface Finish Painted	1
6	mini modern rice milling machine	Rice Mill Mini Modern Rice Mill Mini Rice Mill It fits all standard accessories of 8 Nos. rubber roll sheller , shaft bearing , polish patti, screw patti etc. But it has a unique body design so the percentage of rice about 65-68% from patty. It has a three nos. Of screens, 2 at the bttom of the body and 1 at cover. It	1

SI No	Items Name	Specification	Qty
		<p>comes with rice screen also. It can separate broken rice and whole rice. It will give u best quality polish bran that will be used as cattle food. If runs on electric motor, almost no maintenance required for long time.</p> <p>Specification :</p> <p>Motor : 5 H.P, 3 Phase, 910 RPM. Capacity : 250 Kgs, Paddy / Hour. Percentage of Rice : 65-68% Screen : D-21, U-21, Bearing : 6306Z</p> <p>Feauters :</p> <p>Pully Less & Belt Less Model No need of foundation, can be Driven By Diesel Engine also</p> <p>Well made blower design for husk free clean rice, Special rice screen to separate broken Rice, Useful for Both Row And Boiled Rice , Useful for wheat polishing</p> <p>Made from high quality fine graded emery grains, Balanced emery stones No mixing of emery particles in flour.</p>	
7	Vertical Continuous Band Sealing Machine	<p>Vertical Continuous Band Sealing Machine for packing of flour of capacity 500g, 1kg, 2kg.</p> <p>Band Sealing Machine Specification Capacity 10-15 Meters/Min. Conveyor belt width 200mm Conveyor height Adjustable upto 500mm Conveyor load capacity 25 Power 110v/60hz</p>	1
8	Heat sealing machine	<p>This machine suitable for shops to seal Rasgulla, Gulabjamun, noodle, fruit jelly, pudding, bean milk, hot & cold food, mild tea etc. It adopts IC computer controlling switch for which is easy to be used. The sealing is automatically finished after putting on the case or cup. Its casing is made of stainless steel, in line with the sanitary requirement.</p> <p>Specifications: 123mm Diameter Manual Cup Sealing Machine</p>	1

SI No	Items Name	Specification	Qty
		<ul style="list-style-type: none"> • Product Type : Sealing Machine • Power : 400 W • Voltage : 220 V • Seal material : Polyethylene(PE), Polypropylene(PP), Polyethylene terephthalate(PET), Al. Foil • Size Diameter : 123 mm • Temperature : 0-200oC • Capacity : 350 cups/hr • Dimension (L x B x H) : 490 x 220 x 460 mm approx. <p>Supply with PP Shrink Films roll of two set and 300 pieces 250 gm PP Containers and 300 pieces 500 gm PP Containers and 300 pieces 1000 gm PP Containers.</p>	
9	mini dal milling machine	<p style="text-align: center;">Product Specification</p> <p>Operation Mode Automatic Type of Pulses All Pulses Electricity Connection Single Phase Motor Power 2 HP Power Consumption 3 Kwh Head Pulses Recovery 70-80%</p> <p style="text-align: center;">Product Description</p> <p>This is latest model having two speed systems, capable of dehusking and splitting about 80 to 150 kg of pre conditioned pulses per hour provided with Automatic arrangement of collecting husk, dehusked and split pulses and undehusked pulses in a separate bag and container.</p> <p style="text-align: center;">Recovery of Head pulses 78-80%. Recovery of broken 1-3%. Dehusks and Splits almost all pulses including. Moong and urad 98-100%. Retains proteins and Natural shine pollution Free.</p>	1
10	Hot air oven	<p>Hot air oven (18''x18''x24'') with blower digital temp (Multispan) and time control, inside made of 304SS of 20gage, outside of MS with powder coated finish, ball catcher heavy door. Three side heating elements, Standard double wall fabrication, Inner chamber</p>	1

SI No	Items Name	Specification	Qty
		made of highly polished stainless steel sheet, Exterior fabricated out of thick mild steel duly finished in white stoving enamel with mat finished colour combinations, Quick and uniform heating in range of 50°C to 250°C ±2°C controlled by capillary type thermostat, L-shaped thermometer is built-in type, Control panel is provided with selector switch (Maltispan) of high or low rates of power thermostat control knob and indicators for mains & thermostat.	
11	Muffle furnace	Muffle furnace, size of inner chamber (5''x 5''x 10'')inch, for 1000°C working, For 1000°C working 3.0KW. Outer body is of thick MS sheet painted in heat & rust proof silver ash hammertone / aluminum paint. Kanthal A-1 heating elements are used. Hot & Cold faced Kaynite Base insulating bricks provide the insulation. Temperature is controlled by digital indicator cum controller with suitable CR/AL Thermocouple. Works on 220 V, AC.	1
12	Mini boiler	Mini hot water steam generator with 9 KW electric heater and pressure gauge, safety valve and supply valve and pipeline. Operated on 440 volts 3 phase AC.	1
13	Water soak tank	Water soak tank	1
14	Tray dryer	Tray dryer: cross air flow system, inner 304SS AISI wall of 20 gauge & with 12 number of 304SS AISI tray of 16 gauge, Tray size : (12''x18''x1'')inch. All trays adjustable type with gap of 5'' per tray. Twelve (12) number of tray consist of 4 wire net, 4 perforated and 4 solid tray. Arrangement of tray in two column in two side of double door chamber with ball catchup system. Two side heating elements, Standard double wall fabrication, Glass wool insulation. Inner chamber made of highly polished 304 stainless steel sheet, Exterior fabricated out of thick 16-gauge mild steel duly finished in white stoving enamel with mat finished color combinations, ball catcher heavy door. Quick and uniform heating in range of 50°C to 250°C ±1°C accuracy, Control panel is provided with digital temp (SELEC/Multispan) and time controller (1

SI No	Items Name	Specification	Qty
		<p>SELEC/Multispan) cum indicator with panel.</p> <p>1HP Crompton brand motor with fittings of 304SS made blower type circulating fan. Heating load of 4kw. Operate on 230-volt AC</p>	
15	Mini Flour Mill	<p>Flour making machine – stone type. Capacity – 10-15 kg per hour. Motor 2 or 3 HP. Body made of cast iron body. Driven by pulley and v-belts. Operate on 230/440 volts AC. Unit comes with vibro shifter machine for sieving flour to separate bran of compatible capacity.</p> <p>Supply with one Vertical Continuous Band Sealing Machine for packing of flour of capacity 500g, 1kg, 2kg.</p> <p>Band Sealing Machine Specification Capacity 10-15 Meters/Min. Conveyor belt width 200mm Conveyor height Adjustable upto 500mm Conveyor load capacity 25 Power 110v/60hz</p>	1
16	Flour sieve shaker	<p>The sieve shaker reproduces the circular and tapping motion given to test sieves in hand sieving. The uniform, mechanical action ensures accurate and dependable test. Using the regular height 20-cm diameter sieves, one sample can be tested on a series of six sieves of different openings, all with one operation of machine. The Rotap Sieve Shaker is simple and durably constructed and is run by a FHP motor. The running parts operate in oil. The machine is easily installed. No special foundation is required. A time switch from 0 to 60 minutes is provided.</p> <p>ROTAP sieve shaker machine With FHP Motor and time switch, No of sieves: 6, with regular height 20 cm dia.</p> <p>Supply with 304 SS all Test Sieves of</p>	1

SI No	Items Name	Specification	Qty
		varying mesh number.	
17	Vibrating Screen for grain	Vibrating Screen, Vibrating Screen (3 Nos.) : Width 380mm, Length 600mm. ☑Mesh : Size - 12.7mm, 9.5mm and 6.3mm (Approx.) ☑Drive : Eccentric shaft coupled to motor ☑Feed Hopper : Compatible Capacity with arrangement to control feed. ☑Collecting bins : 4 Nos. of suitable capacity. ☑Control panel Comprises of: Standard make On/Off switch, Mains Indicator etc. ☑A good quality painted rigid MS Structure is provided to support all the parts.	1
18	Computer	Computer	1
	white board,	white board,	1
	marker,	marker,	6
	chart papers,	chart papers,	2
	projector,	projector,	1
	trainer's guide	trainer's guide	1
	aprons	aprons	30
	ear plugs	ear plugs	30
	eye and facial protection	eye and facial protection	30
	muffs;	muffs;	30
	; head-wear;	; head-wear;	30
	Hand gloves	Hand gloves	30
	lifting assistance	lifting assistance	2
	mesh aprons	mesh aprons	30
	protective boot cover	protective boot cover	30
	protective hand and arm covering	protective hand and arm covering	30
	protective head and; hair cover	protective head and; hair cover	30
	uniforms	uniforms	30
	waterproof footwear,	waterproof footwear,	30
	containers	containers	12
	first aid equipment	first aid equipment	3
	safety instruments	safety instruments	3
	clothing	clothing	12
	Mouth Masks	Mouth Masks	60
	Sanitizer	Sanitizer	6
	detergent	detergent	6
	cleaning agent	cleaning agent	6
	Gass oven	Gass oven	1

Marks Distribution

Outcome	Outcome Code	Total Th marks	Total Pr marks	Total OJT marks
Describe the food processing industry, its sub-sectors along with the roles and responsibilities of a Food grains and pulses milling Technician.	FPT/1108/OC1	20	70	0
Oversee rice and wheat milling operations, ensuring quality control through monitoring and adjusting various process parameters in grain processing.	FPT/1108/OC2	20	120	0
Manage pulse milling operations, including cleaning equipment, organizing raw materials, ensuring quality through inspections and tests, controlling processing parameters, and handling rejects and waste.	FPT/1108/OC3	20	120	0
Demonstrate packaging/bagging process of finished products along with proper labeling	FPT/1108/OC4	20	120	0
Supervise postproduction cleaning operations by using appropriate tools and equipment	FPT/1108/OC5	20	70	0
Ensure Food safety with focus on waste disposal and pest control	FPT/1108/OC6	30	80	0
Work effectively at workplace following safe and ethical working practices and good customer relationship.	ELE/1020/OC9	20	70	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	FPT/1108/OC8	0	0	150
Employability Skills – 60 Hrs	DGT/VSQ/N0102	50	0	0