Model Curriculum

Production Manager

SECTOR: FOOD PROCESSING
SUB-SECTOR: FRUIT & VEGETABLE, FOOD GRAIN MILLING (INCLUDING OILSEEDS), DAIRY PRODUCTS, MEAT & POULTRY, FISH & SEAFOOD, BREAD & BAKERY, ALCOHOLIC BEVERAGES, AERATED WATER/ SOFT DRINKS, SOYA FOOD, PACKAGED FOOD, PACKING & REFRIGERATION
OCCUPATION: PROCESSING
REF ID: FIC/Q9003, V1.0
NSQF LEVEL: 7

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

FOOD INDUSTRY CAPACITY AND SKILL INITIATIVE (FICSI)

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: '**Production Manager**' QP No. '**FIC/Q9003, NSQF Level 7**'

Date of Issuance: **04 September, 2018**

Valid up to: **30 June, 2019**

** Valid up to the next review date of the Qualification Pack*

Authorized Signatory
(Food Industry Capacity and Skill Initiative)

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Production Manager

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Production Manager", in the "Food Processing" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	**Production Manager**		
Qualification Pack Name & Reference ID. ID	FIC/Q9003, v1.0		
Version No.	1.0	**Version Update Date**	31/03/2022
Pre-requisites to Training	Bachelor's Degree in engineering		
Training Outcomes	**After completing this programme, participants will be able to:** • manage production process in food processing unit • manage production optimization and cost efficiency in food processing unit • manage documentation system and implement safety and environmental policies in food processing unit.		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of "Production Manager" Qualification Pack issued by "Food Industry Capacity and Skill Initiative".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction to the training program** **Theory Duration** (hh:mm) 03:00 **Practical Duration** (hh:mm) 00:00 **Corresponding NOS Code** Bridge Module	• Introduce each other and build rapport with fellow participants and the trainer. • Spread awareness of the nature and availability of job opportunities • Explain food processing • List the various sub-sectors of food processing industry	
2	**Organizational standards and norms** **Theory Duration** (hh:mm) 09:00 **Practical Duration** (hh:mm) 05:00 **Corresponding NOS Code** FIC/N9015	• Illustrate the roles and responsibilities of a production manager • State how to conduct yourself at the workplace • Follow the personal hygiene and sanitation guidelines and standards	
3	**Manage production process in food processing unit** **Theory Duration** (hh:mm) 17:00 **Practical Duration** (hh:mm) 43:00 **Corresponding NOS Code** FIC/N9014	• Explain how to communicate the organisation policies • Illustrate leadership style and how to apply them • Follow motivating and supporting employees • Initiate personnel actions, such as promotions, transfers, discharges or disciplinary measures • Lead production department and team successfully through difficulties and challenges • Demonstrate reviewing of the sales forecast to meet market requirement • Follow planning details of production in terms of output quantity and quality, cost, time and manpower requirements	Laptop/Computer

		• Follow production schedule to meet market demands/priorities and delivery timelines • Demonstrate identification and confirmation of equipment requirements to meet production target • Explain how to Co-ordinate with maintenance manager/supervisor or team • Follow leadership qualities and build team spirit between production and maintenance personnel through effective communication • Ensure maintenance procedures are followed • Monitor production process • Explain how to address the reason for variation in achieving production schedule, production target within allocated budget • Illustrate monitoring production output and cost, adjusting processes and resources to minimize cost and to achieve quantity and quality product • Follow polices, plans and procedures • Demonstrate preparing for technical production procedures • Illustrate preparing plan and procedures to prevent and control hazards • Provide training to trial team to handle hazards • Illustrate preparing detailed trial production schedule to manage production process	
4	**Manage production optimization and cost efficiency** **Theory Duration** (hh:mm) 17:00 **Practical Duration** (hh:mm) 32:00 **Corresponding NOS Code** FIC/N9015	• Illustrate reviewing production reports and analysing equipment performance, process capability, change over time, maintenance, consumables, power etc, • Illustrate reviewing of any discrepancies during the process and methods to resolve them • Explain calculation of utilities and energy usage in production area • Revise plans and procedures to minimize use of utilities and energy • Identify energy and utility losses or sources of waste and how to save them • Identify system, production process that need to be changed	Laptop/Computer

		• identify opportunities for implementing change in production process • Illustrate designing of new processes, procedures, systems and structures • Provide training and support to implement changes • Illustrate monitoring of changes implemented in production process • Manage budget efficiently by managing production with available resource • Demonstrate how to plan effectively to secure, confirm and allocate required manpower to meet production target within budget • Identify the impact of budget on production-related decisions performance against budget • Identify the causes for any significant variances in budget control	
5	**Manage documentation system and implement safety and environmental policies** **Theory Duration** (hh:mm) 14:00 **Practical Duration** (hh:mm) 28:00 **Corresponding NOS Code** FIC/N9016	• Illustrate how to review the various documentation system followed in the organization. • Explain the need for documenting and maintaining records of purchase, raw materials and packaging materials and machineries to the employees. • Follow reviewing of the method of documenting and recording the details of materials to final purchase to inventory management	Laptop/Computer
6	**Professional and Core Skills** **Theory Duration** (hh:mm) 13:00 **Practical Duration** (hh:mm) 17:00 **Corresponding NOS Code** Bridge Module	• Undertake a self-assessment test to identify personal strengths and weaknesses • Plan and schedule the work order and manage time effectively to complete the tasks assigned • Prevent potential problems from occurring • Resolve issues and problems using acquired knowledge and realize the importance of decision making • Identify potential problems and make sound and timely decision	

		• Improve your reading skills • State the importance of listening	
7	**IT Orientation** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 27:00 **Corresponding NOS Code** FIC/N9016	• Identify parts of the computer • Use the computer keyboard effectively to type • Use ERP effectively to record day-to-day activities • Use the word processor effectively • Use the spreadsheet application effectively • Use the computer to document day-to-day activities	Laptop/Computer
	Total Duration **240:00** **Theory Duration** **88:00** **Practical Duration** **152:00**	**Unique Equipment Required:** Computer/Laptop	

Grand Total Course Duration: **240Hours, 0 Minutes**

*(This syllabus/ curriculum has been approved by **SSC: Food Industry Capacity and Skill Initiative)***

Trainer Prerequisites for Job role: "Production Manager" mapped to Qualification Pack: "FIC/Q9003, v1.0"

Sr. No.	Area	Details
1	**Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "FIC/Q9003", Version 1.0
2	**Personal Attributes**	An aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training, and pre/post work to ensure competent, employable candidates at the end of the training. Strong communication skills, ability to work as part of a team; a passion for quality and for developing others; well-organized and focused, eager to learn and keep oneself updated with the latest in the mentioned fields.
3	**Minimum Educational Qualifications**	• M.Sc/M.Tech/ME in Food Technology or Food Engineering with 5-6 years of hands on experience in a food industry • B.Sc (home Sc) /B.Tech/BE in Food Technology or Food Engineering with 7-8 years of hands on experience in a food industry
4a	**Domain Certification**	Certified for Job Role: "Production Manager" mapped to QP: "FIC/Q9003, v1.0". Minimum accepted score is 80%
4b	**Platform Certification**	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.
5	**Experience**	• M.Sc/M.Tech/ME in Food Technology or Food Engineering with 5-6 years of hands on experience in a food industry • B.Sc (home Sc) /B.Tech/BE in Food Technology or Food Engineering with 7-8 years of hands on experience in a food industry

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Production Manager
Qualification Pack	FIC/Q9003, v1.0
Sector Skill Council	Food Processing

Guidelines for Assessment:

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 evaulations 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 Pack

Assessment outcomes	Assessment criteria for outcomes		Marks Allocation			
			Total Marks	Out Of	Theory	Skills Practical
1. FIC/N9014 (Manage production process in food processing unit)	PC1.	Communicate clearly the organisation policies and goals to the employees of production team, make them understand and commit their energy and expertise to achieve organisation goals	**100**	2.5	1	1.5
	PC2.	Achieve department targets and organisation goals by understanding the organisation and employees, developing a leadership style and applying them appropriately		2.5	1	1.5

	PC3.	Communicate with employees regularly and effectively, help them identify their strengths, provide support to overcome their weakness, listen to their grievances and provide appropriate solutions, and win their trust and support		3	1	2
	PC4.	Motivate and support employees to achieve their work and development objectives, and provide recognition when they are successful		2.5	1	1.5
	PC5.	Encourage employees to take responsibilities, to take own decisions within agreed boundaries, to take lead in their own areas of expertise for their development		2.5	1	1.5
	PC6.	Initiate personnel actions, such as promotions, transfers, discharges or disciplinary measures		3	1	2
	PC7.	Lead production department and team successfully through difficulties and challenges		3	1	2
	PC8.	Review the sales forecast for the week/month (or) monthly production plan discussed with plant manager (or) customer requirement (as applicable) and identify production priorities to meet market requirement		3	1	2
	PC9.	Identify and confirm resource availability like raw materials, packing materials, equipment availability and capacity, production capacity, manpower requirement and availability, stock level, storage capacity, transport capacity etc		3	1	2
	PC10.	Plan details of production in terms of output quantity and quality, cost, time and manpower requirements		3	1	2

	PC11.	Analyze the consequences of failing to meet production/delivery timelines to meet the schedule, notifying relevant authorities of any possibility that demand cannot be met within required timeframe		3	1	2
	PC12.	Develop production schedule to meet market demands/priorities and delivery timelines within budget and with available resources, consult production plan with inter department heads and production supervisor, instruct supervisor to allocate work to production team		3	1	2
	PC13.	Communicate the production schedule to cross function heads through communication system followed by the organisation like e-mail or upload in the erp system		2.5	1	1.5
	PC14.	Identify and confirm equipment requirements to meet production target, share production schedule with equipment requirement to maintenance manager/supervisor for maintenance plan that aligns with production plan		2.5	1	1.5
	PC15.	Co-ordinate with maintenance manager/supervisor to understand materials, consumables and manpower requirement and availability for maintenance activities, for uninterrupted production		3	1	2
	PC16.	Understand equipment maintenance process and procedure and co-ordinate for maintenance activities during breakdown, emergency response, routine cleaning and servicing etc		2.5	1	1.5

	PC17.	Analyze equipment maintenance data to interpret equipment performance and arrive at production capability of each process equipment		3	1	2
	PC18.	Co-ordinate with maintenance team to ensure reliable equipment performance with minimal disruption to production, to minimize down time during equipment breakdowns, and to optimize equipment efficiency to achieve production target		3	1	2
	PC19.	Lead and build team spirit between production and maintenance personnel through effective communication to enhance equipment performance and to identify production improvement opportunities		2.5	1	1.5
	PC20.	Ensure maintenance procedures followed meet food safety and environmental requirements		2.5	1	1.5
	PC21.	Monitor production process for usage of raw materials, packaging materials, manpower, wastage against production plan and identify reason for variances against plan		3	1	2
	PC22.	Address the reason for variation in achieving production schedule, production target within allocated budget		3	1	2
	PC23.	Adjust production schedule in response to variables affecting achievement of production target		3	1	2
	PC24.	Monitor production output and cost, adjust processes and resources to minimize cost and to achieve quantity and quality product		3	1	2
	PC25.	Reschedule production plan in case of urgent requirement or any unforeseen event, to		3	1	2

		minimize wastage and to utilize materials/utilities and resources efficiently, discuss and negotiate changes with inter department team on time for their support and team work				
	PC26.	Review production schedule and process, consult /discuss with supervisor, team and cross function teams identify opportunities for improvement and develop recommendations for improvement on production process		3	1	2
	PC27.	Set polices, plans and procedures, and take initiative to implement the identified improvement opportunities to control cost and to achieve better yield and quality		3	1	2
	PC28.	Monitor, review and ensure production details are documented to meet the documentation requirements of the organisation, and to meet audit requirements like iso, haccp etc		3	1	2
	PC29.	Understand objective of trial production, trial product processing method and specification, select production team for trial, discuss with cross function team like planning, qa, maintenance etc, clarify roles and responsibilities and level of authority to the team and cross function		3	1	2
	PC30.	Prepare technical production procedures considering all engineering and process parameters for new product trial, educate and train supervisors and operators on trial procedure		3	1	2
	PC31.	Identify and consider all possible hazards, prepare plan and procedures to prevent and control hazards,		2.5	1	1.5

		provide training to trial team to handle hazards				
	PC32.	Prepare detailed trial production schedule to manage production process without overlapping/affecting with regular production, and considering availability of raw materials and packaging materials, machine availability and capability, man power availability and competency etc		3	1	2
	PC33.	Monitor trial production against plan to identify variances and factors that need to be adjusted to achieve product of required specification within the planned time		3	1	2
	PC34.	Document and evaluate trial production data and identify process/parameters to be modified/changed to achieve product of required specification		3	1	2
	PC35.	Prepare trial production report with recommendations on improvement opportunities, and share with cross function heads and relevant authorities for suggestion and consideration		3	1	2
				100	**35**	**65**
2. FIC/N9015(Manage production optimization and cost efficiency in food processing unit)	PC1.	Review production reports and analyze equipment performance, process capability, change over time, maintenance, consumables, power etc, to identify factors that affect performance of production and recommend improvement opportunities	**100**	5	1	4
	PC2.	Compile performance data on process and equipment to identify cause for lack of performance, evaluate opportunities to improve, identify cost saving options, propose changes in process,		4	1	3

		and implement proposal with proper approvals				
	PC3.	Review production process with supervisor and machine operators to identify reasons for slowdown or stop of production process, provide recommendations to overcome efficiency issues, take feedback, develop plans for implementing recommended changes, monitor changes implemented, and review changes and improvement		5	2	3
	PC4.	Calculate utilities and energy usage in production area and for production process, identify methods to minimize usage		5	2	3
	PC5.	Develop plans and procedures to minimize use of utilities and energy without affecting the production efficiency		5	2	3
	PC6.	Identify energy and utility losses or sources of waste, analyze reason, recommend methods to improve efficient energy/utility application, ensure recommendations are implemented, and monitor improvement		5	2	3
	PC7.	Identify areas where utilities and energy can be saved, and identify methods to save energy like recycling energy and utilities such as steam, heat and water, following proper maintenance methods to avoid leaks and losses etc, and prepare efficient production schedule such that target is met with efficient utilization of energy and utility		5	2	3
	PC8.	Analyze usage pattern of energy and other utilities in production area and process against budget allocation, identify cost effective		5	2	3

		options for minimizing wastage, and implement changes				
	PC9.	Identify system, production process that need to be changed, identify opportunities for implementing change in production process, analyze impact of change on product quality, impact on the team and present production process		5	2	3
	PC10.	Communicate with relevant authorities/superiors the need for change, results and benefits expected our of change		4	1	3
	PC11.	Design new processes, procedures, systems, structures with roles and responsibilities, key performance indicators, training needs, safety system, contingency plans, monitoring and reporting system to implement planned changes in production process		5	2	3
	PC12.	Provide training and support to implement changes, develop a strategy to help teams implement change		4	1	3
	PC13.	Monitor changes implemented in production process and ensure changes are effective and meet the organisation and regulatory requirements		5	1	4
	PC14.	Document and communicate the progress achieved through implemented change to the management and everyone involved, and make them understand and enjoy achievement		5	2	3
	PC15.	Recognize and reward employees and teams for implementing change in production system and achieving better efficiency		4	1	3

	PC16.	Manage budget efficiently by managing production with available resource, by avoiding overtime and too many casual workers/helpers		5	2	3
	PC17.	Plan effectively to secure, confirm and allocate required manpower to meet production target within budget, monitor resource utilization, to achieve production target within existing resource		5	2	3
	PC18.	Identify situations where actual budget exceeds the approved budget, investigate reason for variance and take appropriate corrective action to keep budget under control		5	2	3
	PC19.	Identify the impact on budget of production-related decisions like scheduling holidays, adjusting production volume, scheduling equipment maintenance etc, before scheduling production, and identify opportunities to improve performance against budget		5	2	3
	PC20.	Identify the causes for any significant variances in budget control, discuss with team and ensure prompt corrective action is taken to keep expenditure under control		5	2	3
	PC21.	Encourage team to think and identify ways of reducing expenditure, analyze and pursue the suggested ideas		4	1	3
				100	**35**	**65**
3. FIC/N9016 (Manage documentation system and implement safety and environmental	PC1.	Establish to production team the importance of documentation, provide training on documentation system, and ensure all documents are maintained systematically	**100**	6	2	4

policies in food processing unit)	PC2.	Ensure all relevant records and documents are complete, up-to-date and accessible for audits on production process		6	2	4
	PC3.	During audit provide the auditor with access to all relevant information, records and documents		6	3	3
	PC4.	Ensure corrective actions recommended and implemented are documented to assure production process is carried in accordance with organisation and regulatory standards		6	2	4
	PC5.	Establish methods to track production information from documented and maintained records		5	2	3
	PC6.	Establish to production team importance of safety and environment requirements related to food processing unit, communicate information about safety and environmental policies and related procedures to the team		6	2	4
	PC7.	Co-ordinate with quality team to prepare policies and sops on safety and environment requirements related to production function, and ensure those procedure are followed in production area and during production process		6	2	4
	PC8.	Ensure safe work procedures are followed in production area and during production process		6	2	4
	PC9.	Ensure policies and standard operating procedures on safety and environment requirements are accessible		5	2	3

		to all employees of production team, and are followed to meet the regulatory requirements				
	PC10.	Identify safety and environmental hazards relevant to production processes, implement system to handle risks		6	2	4
	PC11.	Provide or organize training through relevant authorities on safety and environmental management system, to understand methods to control and prevent hazards		6	2	4
	PC12.	Conduct inspections in work place on use of protective clothing and accessories, and to ensure safety system is followed during production process		6	2	4
	PC13.	Conduct audits and review records on safety and environmental system to monitor if control systems are followed by production team, and address non-compliance following organisation standards		6	2	4
	PC14.	Implement system on waste management in production area and process, monitor and confirm waste collection, treatment, recycling or disposal is carried out meeting industry requirements and environmental regulations		6	2	4
	PC15.	Respond to environmental management hazard identification and incidents in an appropriate and timely way		6	2	4
	PC16.	Review practice and procedures followed on safety, conduct risk assessments, identify non-		6	2	4

	compliance, and provide recommendations to address gaps and non-conformances				
	PC17. Review environmental records documents maintained, analyze data to evaluate effectiveness of the environmental management system and identify areas for improvement, plan and implement improvements to meet regulatory requirements		6	2	4
	Total		**100**	**35**	**65**
	Grand Total	**300**	**300**	**100**	**200**
	Percentage Weightage		**100**	**40**	**60**
	Minimum Pass% to qualify (aggregate)		**70%**		