

Model Curriculum

Textile Printing Machine operator

SECTOR	: TEXTILE
SUB-SECTOR	: PROCESSING - TEXTILES
OCCUPATION	: Dyeing & Printing
REF ID	: TSC/Q5208, V 2.0
NSQF LEVEL	2



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

TEXTILE SECTOR SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of

Job Role/ Qualification Pack: 'Textile Printing Machine operator' QP No. 'TSC/Q 5208' **NSQF Level 2**

Date of Issuance:

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Valid up to:

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

(Dr. Swapna Mishra)

Director (C&T)

(Textile Sector Skill Council)

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Textile Printing Machine operator

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Qualifications Pack – Textile Printing Machine operator”, in the “Textile” Sector and aims at building the following key competencies amongst the learner

Program Name	Textile Printing Machine operator		
Qualification Pack Name & Reference ID.	Textile Printing Machine operator TSC/ Q5208, version 2.0		
Version No.	2.0	Version Update Date	31.03.2022
Pre-requisites to Training	Ability to read and write		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <p>Compulsory NOS</p> <ul style="list-style-type: none"> • Maintain work area, tools and machines • Gain knowledge on behavioral skill for team working • Maintain health, safety and security at work place • Comply with industry and organizational requirement • Perform taking charge of shift and handing over shift • Operate the Printing machine • Prepare the sample for check quality of printed fabric <p>Option 1 – Printing Screen Making</p> <ul style="list-style-type: none"> • Become well verse with taking charge of shift and handing over shift • Learn and familiar in Screen Preparation process • Learn testing methods of exposed screens 		

S. No	Module Type	Module	Key Learning Outcomes	Equipment Required
1.	Compulsory	<p>Follow machine, safety & organizational guidelines in Textile sector</p> <p>Theory Duration (hh:mm) 25:00</p> <p>Practical Duration (hh:mm) 50:00</p> <p>Corresponding NOS Code TSC/N9015</p>	<ul style="list-style-type: none"> Differentiate various types of tools used for cleaning and maintenance. Explain the objectives of each cleaning tool used in production operation. Discuss the significance of safe handling procedures of tools and equipment. Brief the importance and written instructions on the allocated machines. Discuss the significance of minimizing the wastage of material, effort, and time. Prepare a draft schedule for cleaning and waste collection for the assigned job role. List the available types of material handling equipment and handling methods used in the production department. Discuss the types and importance of PPE used in the allotted production department. Demonstrate the procedure to handle materials, tools, PPE, and machines. Demonstrate identification of the appropriate tools and equipment for the respective job. Demonstrate the scheduled cleaning of machines and equipment. Demonstrate the inspection of machine guards Demonstrate the segregation of recyclable, non-recyclable, hazardous wastes Demonstrate the identification of abnormal sounds emanating from faulty/worn-out machine parts. Demonstrate handling of fire extinguishers. 	Material handling equipment, and tool kits of operational, cleaning maintenance activities, Seating arrangement for 25 people.
2.	Compulsory	<p>Follow teamwork, adaptability and communication guidelines in Textile sector</p> <p>Theory Duration (hh:mm) 05:00</p> <p>Practical Duration (hh:mm) 10:00</p> <p>Corresponding NOS Code</p>	<ul style="list-style-type: none"> Discuss the importance of teamwork and following industry protocols at the workplace. Explain the limits and responsibilities for the assigned duties in the textile sector. Summarize emergency contact numbers, details of officials, reporting Protocols, and formats. List hierarchy of communication and communication etiquettes in the textile sector. Demonstrate the ability to work in a dynamic work environment by developing coping mechanisms, survival tactics, and traits of flexibility. Create a sample backup work plan 	Video visuals of basic communications and team working, models of communicating and team working area at your job, Seating arrangement for 25 people

		TSC/N9016	for the shortage of manpower, raw materials, etc	
3.	Compulsory	<p>Carryout shift change, production and quality analyse at fabric printing department</p> <p>Theory Duration (hh:mm) 60:00</p> <p>Practical Duration (hh:mm) 150:00</p> <p>Corresponding NOS Code TSC/N5223</p>	<ul style="list-style-type: none"> • Learning general discipline • Become well verse with basic skills of communication • Understand the role of carding operator • Perform tasks while taking charge of shift and handing over shift • Become familiar in faults identification • Gain knowledge on machine parts & its function • Gain knowledge on preparation activities of Printing machine • Perform Starting and feeding operation • Perform machine settings regarding processing parameters • Perform cutting of the sample • Perform and check the processed sample matching with the standard 	<ul style="list-style-type: none"> • Printing Machine – 1 Nos. • Fabric – 100 mtrs. • Empty Fabric Rolls – 1 Nos.
4	Option 1 – Printing Screen Making	<p>Carryout design preparation and quality analyse of the exposed design screen for fabric printing</p> <p>Theory Duration (hh:mm) 30:00</p> <p>Practical Duration (hh:mm) 60:00</p> <p>Corresponding NOS Code TSC/N5224</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Rotary / Flat Bed Screen Printing Machine as a part of textile processing mill – 1 Nos. • Fabric – 100 mtrs. • Empty Fabric Rolls – 1 Nos.

5	<p>Employability Skills (30 Hours)</p> <p>Theory Duration (hh:mm) 12:00</p> <p>Practical Duration (hh:mm) 18:00</p>	<ul style="list-style-type: none"> • Discuss the importance of Employability Skills in meeting the job requirements. • Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen. • Show how to practice different environmentally sustainable practices • Discuss 21st century skills. • Display positive attitude, self-motivation, problem solving, time management skills and continuous learning mindset in different situations. • Use appropriate basic English sentences/phrases while speaking • Demonstrate how to communicate in a well-mannered way with others. • Demonstrate working with others in a team • Show how to conduct oneself appropriately with all genders and PwD • Discuss the significance of reporting sexual harassment issues in time • Discuss the significance of using financial products and services safely and securely. • Explain the importance of managing expenses, income, and savings. • Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws • Show how to operate digital devices and use the associated applications and features, safely and securely • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely. • Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges. • Differentiate between types of customers • Explain the significance of identifying customer needs and addressing them • Discuss the significance of maintaining hygiene and dressing appropriately. • Create a biodata • Use various sources to search and apply for jobs • Discuss the significance of dressing up neatly and maintaining hygiene for an interview • Discuss how to search and register for apprenticeship opportunities. 	<p>Class room requirements: 25 people seating capacity with a screen and projector</p>
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Compulsory Duration: Theory Duration 102:00 Practical Duration 228:00	Unique Equipment Required: Apron, head cap, nose mask, earplug, shoe, Fabric roll, Fabric trolley
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Grand Total Course Duration: 330 Hours, 0 Minutes

(This syllabus/ curriculum has been approved by TSC: Textile Sector Skill Council)

Trainer Prerequisites for Job role: “Textile Printing Machine operator” mapped to Qualification Pack: “Textile Printing Machine operator / TSC/Q5208, Version 2.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “Textile Printing Machine operator /TSC/Q5208, Version 2.0”.
2	Personal Attributes	Aptitude for conducting training, and pre / post work to ensure competent, Employable candidates at the end of the training. Strong communication skills, interpersonal 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 field.
3	Minimum Educational Qualifications	Basic Literacy & Numeracy
4a	Domain Certification	Certified for Job Role: “Textile Printing Machine operator” mapped to QP: “Textile Printing Machine operator TSC Q5208, Version 2.0 Minimum accepted score 80%.
4b	Platform Certification	Required that the Trainer is certified for MEP/Q 0102 Job Role: “Trainer” with at least 80% score
5	Experience	1 year of Specific sector & 4 years of Trainer experience

Employability Trainer Prerequisites

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate/CITS	Any Discipline			2	Teaching Experience	Prospective ES trainer should: <ul style="list-style-type: none"> • have good communication skills • be well versed in English • have digital skills • have attention to detail • be adaptable • have willingness to learn
Current ITI Trainers	Employability Skills Training (3 days full-time course done between 2019-2022)					
Certified current EEE trainers (155 hours)	from Management SSC (MEPSC)					
Certified Trainer	Qualification Pack: Trainer (MEP/Q0102)					

Annexure: Assessment Criteria

Job Role: Textile Printing Machine operator Qualification Pack: Textile Printing Machine operator (TSC/Q 5208) Sector Skill Council: Textile Sector Skill Council
Guidelines for assessment :- <ol style="list-style-type: none"> 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 & skill practical for each PC. 2. The assessment for the theory part will be based on knowledge bank of question created by the SSC. 3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below) 4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on these criteria. 5. To pass the qualification pack, every trainee should score a minimum of 50%. 6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Module	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
TSC/N9015: Follow machine, safety & organizational guidelines in Textile sector	Maintaining the work area, tools and machines	10	10	-	6
	1. handle materials, machinery, equipment and tools as per standard procedure	-	-	-	-
	2. use appropriate material handling equipment and tools as per standard procedure	-	-	-	-
	3. keep the equipment, machine and work area clean using appropriate cleaning tools as per standard procedure	-	-	-	-
	4. undertake minor routine maintenance of equipment and tools as per standard maintenance procedure	-	-	-	-
	5. maintain record for defective and unsafe equipment and tools	-	-	-	-
	6. verify that machine guards are in place as per standard specifications	-	-	-	-
	7. follow specified ergonomics for the assigned job role in textile sector	-	-	-	-
	8. collect and store worn-out spare parts at specified location	-	-	-	-
	9. report the condition of worn out parts as per standard procedure	-	-	-	-
	Greening and energy conservation in textile sector	7	10	-	6
	10. segregate wastes such as recyclable, non-recyclable, hazardous	-	-	-	-

as per standard protocol				
11. optimize usage of material and resources including water, electricity in various tasks	-	-	-	-
12. switch off the machines and lights when not in use	-	-	-	-
Health, safety and response to emergencies at textile sector	32	40	-	28
13. use Personal Protective Equipment (PPEs) like body protector, ear plugs, nose mask, headcap, etc. as per guidelines	-	-	-	-
14. identify abnormal sounds emanating from faulty or worn out machine parts and take appropriate action	-	-	-	-
15. avoid dependency on any type of intoxicants	-	-	-	-
16. maintain social distance as per the instruction at workplace	-	-	-	-
17. report hazardous material to superiors at workplace	-	-	-	-
18. use the various appropriate fire extinguishers on different types of fires correctly	-	-	-	-
19. follow the specified steps in case of electricity failure	-	-	-	-
20. lift heavy objects using correct lifting procedures	-	-	-	-
21. recall emergency exits, safe spots etc. of workplace	-	-	-	-
22. practice mock drills and evacuation procedures organized by industry	-	-	-	-
23. assist others to reach to safe spots in emergency situations	-	-	-	-
24. provide basic first aid for injury to peers and report to superiors	-	-	-	-
25. interpret different signs, alarms and take action appropriately	-	-	-	-
26. follow the guidelines while working in hazardous atmosphere	-	-	-	-
27. assist in designing the safety plans with peers and superiors	-	-	-	-
28. follow the approved safety plans at workplace	-	-	-	-
Organizational standards and policies	16	20	-	10
29. perform assigned duties as per organization's protocol within scheduled time period	-	-	-	-
30. follow organization policies, quality standards, rules and regulations for working in textile sector	-	-	-	-

	31. motivate colleagues to follow operational guidelines of organization	-	-	-	-
	32. wear specified uniform and follow etiquettes as per standard guidelines for the textile sector	-	-	-	-
	33. maintain hygienic working atmosphere as per protocol of the textile sector	-	-	-	-
	34. submit lost and found articles as per standard protocol	-	-	-	-
	NOS Total	65	80	-	50
Module	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
TSC/N9016. Follow teamwork, adaptability and communication guidelines in Textile sector	Teamwork, trust and communication	10	15	-	5
	1. contribute to create a positive work environment in the team	-	-	-	-
	2. carry out tasks as per instructions received from superiors	-	-	-	-
	3. contribute to team work as per allocated responsibility to complete the task by using appropriate tools and methods	-	-	-	-
	4. build trust with team mates and superiors	-	-	-	-
	5. implement the ideas after superior's approval at work place	-	-	-	-
	6. communicate clearly with the team members as per standard protocol	-	-	-	-
	7. use suggested hand signs, vocal sound signals to convey the information in the production area	-	-	-	-
	8. listen effectively to the ideas and concerns of the peers	-	-	-	-
	9. use correct and respectful terms while communicating as per industry policy	-	-	-	-
	10. express views proactively and effectively	-	-	-	-
	11. make efforts to resolve difference of opinion with superiors and team members	-	-	-	-
	12. report to superior for problems identified in assigned duty	-	-	-	-
	13. report the daily performance to superior in prescribed manner and formats	-	-	-	-
	Adaptability	5	5	-	5
	14. adapt to flexible work environment for the assigned task	-	-	-	-
	15. adapt to work with various members of different ethnicity, gender and PwD without biases	-	-	-	-
	16. consider opinions of colleagues, fitters, superiors for the assigned task	-	-	-	-

	17. plan the work-routine within the limits of the responsibility	-	-	-	-
	18. adopt new ideas after due approval from superior for improving the productivity	-	-	-	-
	NOS Total	15	20	-	10
Module	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
TSC/N5223. Carryout shift change, production and quality analyse at fabric printing department	Taking charge of shift from Printing machine operator	9	10		11
	1. come at least 10 - 15 minutes earlier to the work place	-	-	-	-
	2. bring the necessary operational tools to the department	-	-	-	-
	3. Meet the previous shift Printing machine operator and discuss with him/ her regarding the issues faced by them with respect to the quality, production, spare safety or any other specific instruction etc.	-	-	-	-
	4. understand the fabric being processed & process running on the machine	-	-	-	-
	5. ensure the technical details are mentioned on the job card display on the machine	-	-	-	-
	6. check for the availability of the spare trolley for unloading the fabric	-	-	-	-
	7. check the next batch to be processed is ready near the machine	-	-	-	-
	8. ensure the required dyes & chemicals are already weighed & prepared	-	-	-	-
	9. check the cleanliness of the machines & other work areas	-	-	-	-
	10. question the previous shift operator for any deviation in the above and should bring the same to the knowledge of his/ her shift superior as well as that of the previous shift.	-	-	-	-
	11. Take over the shift from the outgoing operator in a proper manner	-	-	-	-
	Handing over shift to Printing machine operator	9	10		11
	12. ensure in providing the details regarding fabric quality & the process running on the machine	-	-	-	-
	13. provide all relevant information regarding the stoppages or breakdown in the machine, any damage to the fabric or machine.	-	-	-	-

14. ensure the empty trolley is near the machine for unloading the fabric	-	-	-	-
15. ensure the next lot to be processed is ready near the machine already stitched & arranged properly	-	-	-	-
16. ensure the required dyes & chemicals for the next lot or next process are weighed & prepared	-	-	-	-
17. get clearance from the incoming counterpart before leaving the work spot	-	-	-	-
18. report to his/ her shift superiors as well as that of the incoming shift operator in case his/ her counterpart doesn't report for the incoming shift	-	-	-	-
19. ensure the shift has to be properly handed over to the incoming shift operator	-	-	-	-
20. report to his/ her shift superior about the quality / production / safety issues/ any other issue faced in his/ her shift and leave the department only after getting concurrence for the same from his/ her superiors	-	-	-	-
21. collect the wastes from waste collection bags, weigh them and transport to storage area	-	-	-	-
22. ensure the machine and its work place is clean	-	-	-	-
Carry out preparatory activities for operations in the machine	52	110		5
1. understand the task mentioned in the work order	-	-	-	-
2. ensure that the machine is empty & clean	-	-	-	-
3. load the fabric from the batch/trolley in the center of the machine at the feeding point	-	-	-	-
4. ensure fabric is crease-free and lint/ dust free	-	-	-	-
5. place the screens on the print station/ printing head according to the colours to be printed	-	-	-	-
6. set the repeat according to the design to be printed	-	-	-	-
7. apply glue /adhesive material to the printing blanket for sticking	-	-	-	-
Preparation of Print paste	50	110		5
8. get all dyes & printing chemical / auxiliaries weighed	-	-	-	-
9. mix the thickener, binder & other auxiliaries first to get the required viscosity	-	-	-	-
10. add dyes/ pigments to the thickening paste according to the shade	-	-	-	-

	11. filter the print paste to avoid choke up of design screen	-	-	-	-
	Operate the machine for specified tasks as per Work Order	20	44		5
	12. check screen zero position on the blanket for proper fabric printing before starting to print fabric	-	-	-	-
	13. Start the machine & adjust the squeeze pressure if registration is poor or uneven	-	-	-	-
	14. adjust the squeeze pressure if registration is poor or uneven	-	-	-	-
	15. maintain synchronized & continuous feeding of fabric	-	-	-	-
	16. check for pin holes & other defects due to blockage of screen	-	-	-	-
	17. clean the screens if machine is stopped for longer periods	-	-	-	-
	Clean the machine on a regular basis and carryout preventive maintenance activities	20	42		5
	18. make sure the fabric is dried properly after printing	-	-	-	-
	19. keep the machine clean at all times	-	-	-	-
	20. follow the preventive maintenance schedule & ensure the machine is running smoothly	-	-	-	-
	21. check that all controls are functioning properly	-	-	-	-
	22. clean the printing blanket before changing to new design or new matching	-	-	-	-
	Cutting the sample after dryer	20	42		5
	1. cut the sample after the dryer	-	-	-	-
	2. fix/ cure the printed sample in a steamer or oven	-	-	-	-
	3. wash the sample after curing & dry it	-	-	-	-
	Checking the sample with the standard	20	42		3
	4. compare the sample with standard as mentioned in the work order	-	-	-	-
	5. take the sample to supervisor if its not matching to standard	-	-	-	-
	NOS Total	200	410		50
Module	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Option 1 – TSC/N5224: Carryout design preparation and quality analyse of the exposed design screen for fabric	Carry out preparatory activities for screen making	24	48		5
	1. understand the task mentioned in the work order	-	-	-	-
	2. check the art work or the design film to be exposed	-	-	-	-

printing	3. check the design repeat	-	-	-	-
	4. check the no. of colours to be printed	-	-	-	-
	5. clean the screen frames	-	-	-	-
	6. select the right mesh size depending upon the design to be printed	-	-	-	-
	7. cut the required no. of mesh fabric as per size of screen	-	-	-	-
	Operate the machine for the specified task as per work order	22	48		5
	8. stretch the mesh on all frames evenly & leave it for few hours	-	-	-	-
	9. re stretch the mesh again & stick it to the frame with glue	-	-	-	-
	10. degrease the screen thoroughly using screen degreaser	-	-	-	-
	11. apply solvent resistant direct emulsion evenly to the screen	-	-	-	-
	12. dry the screen completely before exposure	-	-	-	-
	13. maintain optimum drying conditions in the drying area	-	-	-	-
	14. ensure the drying area is warm & dust free	-	-	-	-
	15. expose the screen using a light exposure unit	-	-	-	-
	16. wash the exposed screen thoroughly	-	-	-	-
	17. dry the screen completely	-	-	-	-
	Clean the machine on a regular basis and carryout preventive maintenance activities	22	48		5
	18. keep the exposing machine & other equipment clean at all times	-	-	-	-
	19. follow the preventive maintenance schedule & ensure the machine is running smoothly	-	-	-	-
	20. check that all controls are functioning properly	-	-	-	-
	21. replace the exposing unit bulbs when its due	-	-	-	-
	22. keep the exposing & drying area dust free	-	-	-	-
	23. Store the screen in the rack for repeat orders	-	-	-	-
	Checking the quality of exposed design screen	22	46		5
	1. examine the screen under white light for pinhole & other defects	-	-	-	-

	2. do the touching of any pin holes or other defects	-	-	-	-
	3. mask the sides with tape to avoid wastage of print paste	-	-	-	-
	4. fix the end rings to the screen in case of Rotary screen	-	-	-	-
	NOS Total	90	190		20

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation		
				Theory Marks	Practical Marks	Viva Marks
DGT/VSQ/N0101 – Employability Skills	Introduction to Employability Skills			1	1	-
	1. understand the significance of employability skills in meeting the job requirements					
	Constitutional values – Citizenship			1	1	-
	2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices.					
	Becoming a Professional in the 21st Century			1	3	-
	3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.					
	Basic English Skills			2	3	-
	4. speak with others using some basic English phrases or sentences					
	Communication Skills			1	1	-
	5. follow good manners while communicating with others					
	6. work with others in a team					
	Diversity & Inclusion			1	1	-
	7. communicate and behave appropriately with all genders and PwD					
	8. report any issues related to sexual harassment					
	Financial and Legal Literacy			3	4	-
	9. use various financial products and services safely and securely					
	10. calculate income, expenses, savings etc.					
	11. approach the concerned authorities for any exploitation as per legal rights and laws					

	Essential Digital Skills			4	6	-
	12. operate digital devices and use its features and applications securely and safely					
	13. use internet and social media platforms securely and safely					
	Entrepreneurship			3	5	-
	14. identify and assess opportunities for potential business					
	15. identify sources for arranging money and associated financial and legal challenges					
	Customer Service			2	2	-
	16. identify different types of customers					
	17. identify customer needs and address them appropriately.					
	18. follow appropriate hygiene and grooming standards.					
	Getting ready for apprenticeship & Jobs			1	3	-
	19. create a basic biodata					
	20. search for suitable jobs and apply					
	21. identify and register apprenticeship opportunities as per requirement					
	NOS Total		50	20	30	-
	Grand Total		1250	390	730	130



Textile Sector Skill Council

15th Floor, Nirmal Tower, Barakhamba Road, New Delhi-110 001