

Model Curriculum

Fitter - Chemical Processing (Textiles)

SECTOR : TEXTILE

SUB-SECTOR : PROCESSING - TEXTILES

**OCCUPATION : Maintenance - Processing
Machines**

REF ID : TSC/Q5701, V 3.0

NSQF LEVEL : 4



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: 'Fitter - Chemical Processing (Textiles)' QP No. 'TSC/Q 5701'
NSQF Level 4

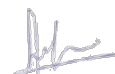
Date of Issuance:

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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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Fitter - Chemical Processing (Textiles)

CURRICULUM / SYLLABUS

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

Program Name	Fitter - Chemical Processing (Textiles)		
Qualification Pack Name & Reference ID.	Fitter - Chemical Processing (Textiles) TSC/Q5701, version 3.0		
Version No.	3.0	Version Update Date	31.03.2022
Pre-requisites to Training	<ul style="list-style-type: none"> • 11th grade pass with no experience (OR) • Completed 1st year of 3-year diploma (after 10th) and pursuing regular diploma with no experience (OR) • 10th grade pass plus 1-year NTC/ NAC with no experience (OR) • 8th grade pass plus 2-year NTC plus 1 Year NAC with no experience (OR) • 8th pass plus 1-year NTC plus 1-Year NAC plus CITS with no experience (OR) • 10th grade pass and pursuing continuous schooling (OR) • 10th Grade Pass with 2 year relevant experience (OR) • Previous relevant Qualification of NSQF Level 3.0 with minimum education as 5th Grade pass (OR) • Previous relevant Qualification of NSQF Level 3.5 with 1 year relevant experience 		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Become well verse with taking charge of shift and handing overshift • Learn and familiar to carryout Maintenance activities • Maintain records and ensure spare availability in processing unit • Maintain work area, tools and machines • Gain behavioral skill for team working • Maintain health, safety and security at work place • Comply with industry and organizational requirement 		

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 TSC/N9016</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 for the shortage of manpower, raw materials, etc 	Video visuals of basic communications and team working, models of communicating and team working area at your job, Seating arrangement for 25 people

3.	Compulsory	<p>Taking charge of shift and handing over shift to Fitter – Processing</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 30:00</p> <p>Corresponding NOS Code TSC/N5701</p>	•	<ul style="list-style-type: none"> Textile Processing Machines in Textile Processing unit – 1 Nos. Fabric – 500 Mtrs. Relavent Maintenance Tools & Accessories kit – 1 Nos.
4.	Compulsory	<p>Carryout all types of Maintenance activities in Processing unit</p> <p>Theory Duration (hh:mm) 60:00</p> <p>Practical Duration (hh:mm) 180:00</p> <p>Corresponding NOS Code TSC/N5702</p>	•	<ul style="list-style-type: none"> Textile Processing Machines in Textile Processing unit – 1 Nos. Fabric – 500 Mtrs. Relavent Maintenance Tools & Accessories kit – 1 Nos.
5.	Compulsory	<p>Maintaining records & ensure spare availability in Processing unit</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 30:00</p> <p>Corresponding NOS Code TSC/N5703</p>	•	<ul style="list-style-type: none"> Textile Processing Machines in Textile Processing unit – 1 Nos. Fabric – 500 Mtrs. Relavent Maintenance Tools & Accessories kit – 1 Nos.

6	<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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Duration: Theory Duration 132:00 Practical Duration 318:00	Unique Equipment Required: Apron, head cap, nose mask, earplug, shoe, Maintenance Kit, Fabric, Yarn Package
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Grand Total Course Duration: 450 Hours, 0 Minutes

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

Trainer Prerequisites for Job role: “Fitter – Chemical Processing (Textiles)” mapped to Qualification Pack: “Fitter – Chemical Processing (Textiles) / TSC/Q5701, Version 3.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “Fitter – Chemical Processing (Textiles) /TSC Q5701, Version 3.0”.
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 and Numeracy
4a	Domain Certification	Certified for Job Role: “Fitter - Processing” mapped to QP: “Fitter – Chemical Processing(Textiles)TSC Q5701, Version 3.0 Minimum accepted score 80%.
4b	Platform Certification	Required that the Trainer is certified for MEP/Q2601 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: Fitter - Textile Processing

Qualification Pack: Fitter - Textile Processing (TSC/Q 5701)

Sector Skill Council: Textile Sector Skill Council

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 & 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 70%.
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/N5701: Taking charge of shift and handing over shift to Fitter Processing	Taking charge of shift from fitter-Processing	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 fitter 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 the next batch to be processed is ready near the machine	-	-	-	-
	7. check the cleanliness of the machines & other work areas	-	-	-	-
	8. Question the previous shift fitter for any deviation in the above and bring the same to the knowledge of his/ her shift superior as well that of the previous shift	-	-	-	-
	9. hand over the shift to the incoming fitter- Processing in a	-	-	-	-

	proper manner				
	10. ensure in providing the details regarding fabric quality & the process running on the machine	-	-	-	-
	Handing over shift to fitter-Processing	9	10		11
	11. provide all relevant information regarding the stoppages or breakdown in the machine, any damage to the fabric or machine	-	-	-	-
	12. ensure the empty trolley is near the machine for unloading the fabric	-	-	-	-
	13. ensure the next lot to be processed is ready near the machine already stitched & arranged properly	-	-	-	-
	14. ensure the required dyes & chemicals for the next lot or next process are weighed & prepared	-	-	-	-
	15. get clearance from the incoming counterpart before leaving the work spot	-	-	-	-
	16. report to his/ her shift superiors as well as that of the incoming shift supervisor in case his/ her counterpart doesn't report for the incoming shift	-	-	-	-
	17. ensure the shift has to be properly handed over to the incoming shift fitter	-	-	-	-
	18. 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	-	-	-	-
	19. collect the wastes from waste collection bags, weigh them and transport to storage area	-	-	-	-
	20. ensure the your work area is clean				
	NOS Total	18	20		22
Module	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
TSC/N5702: Carryout all types of Maintenance activities in Processing unit	Carryout General Maintenance activities	75	160		20
	1. take round of the work area before the start of the shift and observing the working	-	-	-	-
	2. noting down the machines stopped for repairs and the type of problem.	-	-	-	-
	3. dismantle and assemble different mechanisms in machines	-	-	-	-

on need basis				
4. understand the work done till now and the work pending in the machines stopped for repairs or for maintenance work or modifications	-	-	-	-
5. understand the production plan and preparing maintenance plan and allocating people for different activities	-	-	-	-
6. allocate the workers for different tasks considering their knowledge, skills, maturity and workloads agreed	-	-	-	-
7. ensure the use of safety gadgets like masks, gloves and shoes by all maintenance workers	-	-	-	-
8. to view display panel board and identify the reason for breakdown maintenance	-	-	-	-
9. identify any abnormal sound in machine and stop the machine for carrying out maintenance activities	-	-	-	-
Carryout Preventive maintenance activities	75	160		15
10. check the proper functioning of machines like stenter, jiggers, drying range, mercerizing, singeing, sanforizing & others	-	-	-	-
11. check the conditions of machine parts while they are being cleaned/scoured or overhauled	-	-	-	-
12. identify the worn out parts and getting the worn-out parts replaced.	-	-	-	-
13. monitor the stoppages due to breakdowns and analysing the reasons for breakdowns and taking precautionary measures	-	-	-	-
14. conduct the tool audits i.e. the tools used for maintenance like spanners, top arm gauge, lubricating and flushing pumps, buffing machines, mounting machines, etc	-	-	-	-
15. to oil and grease the different machine parts at scheduled interval for smooth functioning of machines	-	-	-	-
16. ensure correct oil and grease are taken	-	-	-	-
17. ensure proper functioning of machines in the processing department	-	-	-	-
Carryout breakdown maintenance activities	75	155		15
18. attend the machine on a break down	-	-	-	-

	19. report to the maintenance supervisor on a breakdown	-	-	-	-
	20. preparing the machine for carrying out breakdown maintenance	-	-	-	-
	21. ensure in bringing the proper tool and equipment required for carrying out maintenance	-	-	-	-
	22. analyze the machine which is under breakdown	-	-	-	-
	23. identify the reason for breakdown	-	-	-	-
	24. replace worn out parts with new parts	-	-	-	-
	25. ensure safety while carrying out maintenance activity	-	-	-	-
	26. ensure proper material handling of maintenance tools	-	-	-	-
	27. check for proper functioning of machine after maintenance	-	-	-	-
	28. repair further and ascertain if further fine tuning is needed	-	-	-	-
	29. ensure the output material quality is as per quality requirement	-	-	-	-
	30. ensure the use of safety gadgets like caps, masks, gloves and shoes by all maintenance workers	-	-	-	-
	31. ensure minimum time taken for attending the breakdown, identifying the reason for breakdown and carryout the breakdown maintenance activities	-	-	-	-
	NOS Total	225	475		50
Module	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
TSC/N5703: Maintaining records & ensure spares availability in processing unit	Maintaining records of maintenance activities	20	45		10
	1. carryout maintenance auditing	-	-	-	-
	2. record the activities in the log book (Report Book) and update the machine history book	-	-	-	-
	3. plan maintenance activities by preparing date-wise plans for maintenance and replacement of parts considering their life	-	-	-	-
	4. calculate maintenance efficiency; time spent for maintenance, men employed, cost of maintenance, costs of spares consumption	-	-	-	-
	Ensuring spares availability	20	45		10
	5. verify the stock of various spares, accessories and lubricants	-	-	-	-

	6. work out the indenting plan and placing indents.	-	-	-	-
	7. refer the machinery catalogues and identify the correct spares needed.	-	-	-	-
	8. ensure availability of spares and giving requisitions on need basis	-	-	-	-
	9. maintain records of spares , oils & lubricants consumed	-	-	-	-
	10. check the quality of materials received at stores, for e.g. bearings, wheels, machine spares, belts, brushes, spanners and other tools	-	-	-	-
	NOS Total	40	90		20
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 attextile 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 fromfaulty or worn out machine parts and take appropriate action	-	-	-	-
15. avoid dependency on any type ofintoxicants	-	-	-	-
16. maintain social distance as per theinstruction at workplace	-	-	-	-
17. report hazardous material to superiors atworkplace	-	-	-	-
18. use the various appropriate fire extinguishers on different types of fires correctly	-	-	-	-
19. follow the specified steps in case ofelectricity failure	-	-	-	-
20. lift heavy objects using correct liftingprocedures	-	-	-	-
21. recall emergency exits, safe spots, etc. ofworkplace	-	-	-	-
22. practice mock drills and evacuationprocedures organized by industry	-	-	-	-
23. assist others to reach to safe spots inemergency situations	-	-	-	-
24. provide basic first aid for injury to peersand report to superiors	-	-	-	-
25. interpret different signs, alarms and takeaction appropriately	-	-	-	-
26. follow the guidelines while working inhazards atmosphere	-	-	-	-
27. assist in designing the safety plans withpeers and superiors	-	-	-	-
28. follow the approved safety plans atworkplace	-	-	-	-
Organizational standards and policies	16	20	-	10
29. perform assigned duties as per organization's protocol within scheduled timeperiod	-	-	-	-
30. follow organization policies, quality standards, rules and regulations for working intextile sector	-	-	-	-
31. motivate colleagues to follow operationalguidelines of organization	-	-	-	-
32. wear specified uniform and follow etiquetteas per standard guidelines for the textile sector	-	-	-	-
33. maintain hygienic working atmosphere asper 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

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	383	715	152



Textile Sector Skill Council

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