

Model Curriculum

Automatic Shuttle Loom Operator

SECTOR : TEXTILE
SUB-SECTOR : WEAVING
OCCUPATION : WEAVING
REF ID : TSC/Q2201, V1.0
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: 'Automatic Shuttle Loom Operator'
QP No. 'TSC/Q2201' **NSQF Level 4**'

Date of Issuance: **May, 30th, 2019**

Valid up to: **May, 30th, 2021**

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

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(Textile Sector Skill Council)

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Automatic Shuttle Loom Operator

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Automatic Shuttle Loom Operator”, in the “Textile” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Automatic Shuttle Loom Operator		
Qualification Pack Name & Reference ID.	TSC/Q2201		
Version No.	1.0	Version Update Date	30.05.2019
Pre-requisites to Training	Preferably Class 10th		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Demonstrate activities involved in taking charge of shift and handing over shift of Automatic shuttle loom operator • Operate the Automatic Shuttle loom • Maintain work area, tools and machines as per weaving mill guidelines • Work effectively in a team • Describe the importance of health, safety and security at workplace 		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of “Automatic Shuttle Loom Operator” Qualification Pack issued by “TSC: Textile Sector Skill Council”

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1.	<p>Taking Charge of shift and handing over shift to Automatic shuttle loom operator</p> <p>Theory Duration (hh:mm) 16:00</p> <p>Practical Duration (hh:mm) 50:00</p> <p>Corresponding NOS Code TSC/N2201</p>	<ul style="list-style-type: none"> • Explain the different types of fabrics and its usage • Describe the importance of general discipline at workplace • Describe the weaving process flow • Discuss the production information with the incoming and outgoing counterpart • Describe the role of Automatic shuttle loom operator • Demonstrate the activities involved in taking charge of shift and handing over of shift • Recall the material flow in the weaving industry • Identify the fabric faults and report as per the industry standard 	<ul style="list-style-type: none"> • Computer and Projector • Warp Beam • Weft Package • Automatic shuttle loom in production condition • Drawing hook • Magnifying glass
2.	<p>Running automatic shuttle loom</p> <p>Theory Duration (hh:mm) 48:00</p> <p>Practical Duration (hh:mm) 92:00</p> <p>Corresponding NOS Code TSC/N2202</p>	<ul style="list-style-type: none"> • Describe the parts and functions of Automatic shuttle loom machine • Describe the importance of Automatic shuttle loom maintenance • Demonstrate warp attending procedure • Demonstrate weft replenishment attending procedure • Record the technical details/information in the given log book or ledger • List the need and importance operational tools required for Automatic shuttle loom machine • List out the major check points in the Automatic shuttle loom before starting the machine • Demonstrate the activities involved in loom preparation 	<ul style="list-style-type: none"> • Computer and Projector • Warp Beam • Weft Package • Automatic shuttle loom in production condition • Drawing hook • Magnifying glass
3.	<p>Maintain work area, tools and machines</p> <p>Theory Duration (hh:mm) 06:00</p> <p>Practical Duration (hh:mm) 13:00</p> <p>Corresponding NOS Code TSC/N9001</p>	<ul style="list-style-type: none"> • Maintain the workplace clean and neat • Describe the functions of basic hand tools • List out the available material handling equipment in weaving unit • List the various maintenance activities for Automatic shuttle loom machine • Describe the importance of machine guard • Demonstrate the drive belt installation in the loose pulley of 	<ul style="list-style-type: none"> • Computer and Projector • Warp Beam • Weft Package • Automatic shuttle loom in production condition • Drawing hook • Magnifying glass

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>the machine</p> <ul style="list-style-type: none"> • Demonstrate the shuttle maintenance activities such as tip sharpening, yarn guide replacement etc. as per standard procedure • List out the oil drop points in the Automatic shuttle loom machine • Demonstrate the correct way of lifting tools/ equipment as per standard procedure • Describe the need for greasing the ball bearings and the greasing frequency 	
4.	<p>Working in a team</p> <p>Theory Duration (hh:mm) 07:00</p> <p>Practical Duration (hh:mm) 12:00</p> <p>Corresponding NOS Code TSC/N9002</p>	<ul style="list-style-type: none"> • Discuss the importance of team work • List out the team work activities in Automatic shuttle loom shed • Discuss the process involved in loom gaiting process and roles of Automatic shuttle loom operator/ helper in gaiting operation • Demonstrate warp beam positioning on the loom • Demonstrate heald frame installation on the loom along with team mates • Explain the company policies • Submit daily report of the own performance • Report the daily work done to supervisory as per company's protocol 	<ul style="list-style-type: none"> • Computer and Projector • Warp Beam • Weft Package • Automatic shuttle loom in production condition • Drawing hook • Magnifying glass
5.	<p>Maintain health, safety and security at workplace</p> <p>Theory Duration (hh:mm) 16:00</p> <p>Practical Duration (hh:mm) 21:00</p> <p>Corresponding NOS Code TSC/N9003</p>	<ul style="list-style-type: none"> • Identify the Automatic shuttle loom machine malfunction • Report the machine malfunction to the supervisor as per standard procedure • Discuss the importance of wearing Personal Protective Equipment in the Automatic shuttle loom shed • List general safety methods to be followed in Automatic shuttle loom shed • Discuss the importance of healthy environment in the workplace • Handle the tools and waste as per company standard • Monitor the workplace for possible health hazards • Identify and select right firefighting equipment • Describe the evacuation methods during emergency situation 	<ul style="list-style-type: none"> • Computer and Projector • Warp Beam • Weft Package • Automatic shuttle loom in production condition • Drawing hook • Magnifying glass

Sr. No.	Module	Key Learning Outcomes	Equipment Required
6.	<p>Comply with industry and organizational requirement</p> <p>Theory Duration (hh:mm) 07:00</p> <p>Practical Duration (hh:mm) 12:00</p> <p>Corresponding NOS Code TSC/N9004</p>	<ul style="list-style-type: none"> List out the responsibilities of Automatic shuttle loom operator Communicate information to the co-worker/ supervisor as per standard protocol Discuss the importance of following the industry standards Demonstrate reporting to the supervisor as per standard procedure Write the material requisition form for the worn out/ damaged parts in the Automatic shuttle loom machine List the quality requirements of woven fabric Discuss the dress code to be followed in Automatic shuttle loom shed as per industry standard Discuss the importance of loom patrolling as per standard patrolling method 	<ul style="list-style-type: none"> Computer and Projector Warp Beam Weft Package Automatic shuttle loom in production condition Drawing hook Magnifying glass
<p>Total Duration: (hh:mm) 300:00</p> <p>Theory Duration (hh:mm) 100:00</p> <p>Practical Duration (hh:mm) 200:00</p>		<p>Unique Equipment Required:</p> <p>Computer and Projector, Warp Beam, Weft Package, Automatic shuttle in production condition, Drawing hook, Magnifying glass</p>	

Grand Total Course Duration: 300 Hours, 0 Minutes
(This syllabus/ curriculum has been approved by TSC: Textile Sector Skill Council)

Trainer Prerequisites for Job role: “Automatic Shuttle Loom Operator” mapped to Qualification Pack: “Automatic Shuttle Loom Operator/TSC/Q2201, Version 1.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “Automatic Shuttle Loom Operator/TSC/Q2201, Version 1.0”.
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: “Automatic Shuttle Loom Operator” mapped to QP: “TSC/Q2201, Version 1.0”. 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

ASSESSMENT CRITERIA

Job Role: Automatic Shuttle Loom Operator

Qualification Pack: TSC/Q2201, V1.0

Sector Skill Council: Textile Sector Skill Council

Assessment Guidelines:

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. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
5. To pass the Qualification Pack, every trainee should score a minimum of 80%
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

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation		
				Theory	Skills Practical	Viva
1. TSC/N2201 (Taking charge of shift and handing over shift to Automatic Shuttle Loom Operator)	PC1. Come at least 10 - 15 minutes earlier to the work spot	160	12	0	12	0
	PC2. bring the necessary operational tools like " weavers' hook", " knife" etc.		12	6	6	0
	PC3. Meet the previous shift warper, discuss with him/ her regarding the issues faced by them with respect to the quality or production or spare or safety or any other specific instruction etc.		12	3	6	3
	PC4. check for the availability of the weft & the condition of the same		12	3	6	3
	PC5. check the condition of the running beams, for cross ends, ends pulling out particularly at the selvedge		12	4	8	0
	PC6. check the availability of the " thrums" quality & condition of the same		10	2	8	0
	PC7. check the cloth for the running damages like end out, wrong drawing, wring denting, double end, reed mark, temple cut/ temple mark, let- off mark, take up fault, oil stain, hole, cloth torn, weft catching, weft lashing in etc.		10	4	6	0
	PC8. check for the size of the cloth rolls & to see whether any indication is there in the cloth rolls		12	2	8	2
	PC9. check the cleanliness of the machines & other work areas		10	3	4	3
	PC10. Check whether any spare/raw material/ tool / fabric/ any other material are thrown under the machines or in the other work areas.		10	2	6	2

	PC11. Question the previous shift weaver for any deviation in the above and should bring the same to the knowledge of his/ her shift superior as well that of the previous shift as well.		12	2	8	2
	PC12. hand over the shift to the incoming weaver in a proper manner & get clearance from the incoming counterpart before leaving the work spot		12	3	8	1
	PC13. Report to his/ her shift superiors as well as that of the incoming shift, in case his/ her counterpart doesn't report for the incoming shift. in that case, the shift has to be properly handed over to the incoming shift superior & get clearance from him/ her, before leaving the work spot		12	3	8	1
	PC14. report to his/ her shift superior about the quality / production / safety issues/ any other issue faced in his/ her shift and should leave the department only after getting concurrence for the same from his/ her superiors		12	3	6	3
			160	40	100	20
	Total	Weightage %		76%	19%	5%
2. TSC/N2202 (Running automatic shuttle loom)	PC1. Make tiny & firm warper's knots	340	8	2	6	0
	PC2. find out broken warp ends		8	0	8	0
	PC3. Find out the location of the broken end, by bringing the hands under the dropper bars, with mechanical droppers.		8	0	8	0
	PC4. detect the location using the indication lamp & by bringing the hands over the droppers, with electrical warp stop motion		8	3	5	0
	PC5. mend the broken warp end in the sized beams with the thrums of the same count of the sized beams, using " weavers ' knots"		8	3	5	0
	PC6. draw the mended warp yarn through the healds properly, as per the drawing order prescribed		8	2	4	2
	PC7. draw the mended warp yarn through the reed dent, properly, as per the denting order prescribed		10	5	5	0
	PC8. see that the sley has been brought to the back centre		8	3	3	2
	PC9. see that the shuttle is inserted fully in the shuttle box		10	3	4	3
	PC10. run the loom by pulling the starting handle with full torque		8	2	4	2
	PC11. see that the sley has to be brought the back centre		8	0	6	2
	PC12. take out shuttle from shuttle box		8	2	4	2
	PC13. do pick finding		8	0	6	2
	PC14. find out the last pick inserted in the produced cloth		8	2	6	0

PC15. tie sley to the back centre, after doing the pick finding	8	2	6	0
PC16. insert shuttle into the correct box as per the pick finding done	8	0	8	0
PC17. see that the shuttle is inserted fully in the shuttle box	8	0	8	0
PC18. Bring the loom to the front centre to see that there is no gap between the reed & the fell of the cloth. accordingly take up should be adjusted	8	4	4	0
PC19. bring back sley to centre	8	4	4	0
PC20. see that the shuttle is inserted fully in the shuttle box	8	2	4	2
PC21. run the loom by pulling the starting handle with full to	8	2	4	2
PC22. pull about 2 meters of weft in the pirns in the right hand & hold around 4 - 5 pirns at a time in the left hand	8	2	4	2
PC23. Press the pirn head of the pirns in space in the battery disc one by one and press the tips of the pirn in the aligned path of the pirn holders, then wind the pirn threads in the battery umbrella, anti-clock wise.	8	2	4	2
PC24. Correct the fabric defects like wrong drawing, wrong denting, end out, double end etc., immediately and also ensure that the other fabric defects too are corrected at the earliest, before continuing further production.	8	2	4	2
PC25. clean the machines & work area, so as to ensure good working atmosphere, without damaging the fabrics in the looms where the cleaning work is carried out as well as in the adjacent & opposite looms. Should not misuse "air". can use air for cleaning, only in the areas, where it is allowed	8	2	4	2
PC26. " unweave " the same in case of any floats	8	2	4	2
PC27. run the machine without " starting mark or crack"	8	2	4	2
PC28. Ensure that the loose threads are hanged in higher length (not more than 4 mm). Accordingly, and trimmed, after attending to the warp breaks.	8	2	4	2
PC29. patrol the machines and do mending so as to minimize the stoppages	8	4	4	0
PC30. Tie the "waist bag" & all the waste generated by the weavers are collected in the said waist bag, which can be ultimately disposed in the places/ bins provided, at the end of the shift.	8	5	3	0
PC31. ensure that the correct weft yarn, as per the " loom card" only is used	8	35	3	0

	PC32. See that the weft yarn is completely used, without giving room for additional wastage of raw materials. For any quality issue or defective cone etc., the same has to be brought to the notice of the superiors.		8	6	2	0
	PC33. Avoid pulling out warp ends unnecessarily. if end is getting cut often in the selvage, the same has to be brought to the notice of the mechanics/ fitters/ superiors & get it corrected		8	4	4	0
	PC34. ensure that all the stop motions, preventive mechanisms etc., function properly		8	5	3	0
	PC35. ensure correct quality of thrums are there & see that the same are properly tied		8	5	3	0
	PC36. check the knotted loom for knotting quality etc. double ends have to be removed should report to superiors for any deviation in the same & for any other quality issue		8	6	1	1
	PC37. ensure that his/ her looms are stopped for a minimum possible down time due to whatever reason & see that he/ she gets maximum outputs in his/ her shift		8	6	1	1
	PC38. check the fabrics for the defects at least twice in a shift and sign on the cloth in both times		8	4	4	0
	PC39. ensure that cloth rolls are doffed whenever/ wherever necessary		8	4	4	0
	PC40. Give preference to safety. Should not enter the area, where he/ she are not allowed. should not do a job in which training has not being given		8	2	4	2
	PC41. Ensure that no raw material/ cloth/ spare/ tool / any other material is thrown under/ near the machines or in the other work areas.		8	3	3	2
	PC42. Check for the reasons for the frequent warp/ weft breaks. The reasons that could be corrected by him/ herself should be corrected. otherwise, the same has to be reported to the mechanics/ fitters/ superiors		8	3	3	2
			340	117	182	41
	Total	Weightage %		34%	54%	12%
3. TSC/ N9001 (Maintain work area, tools and machines)	PC1. Handle materials, machinery, equipment and tools safely and correctly	50	4	2	1	1
	PC2. Use correct lifting and handling procedures		4	2	1	1
	PC3. Use materials to minimize waste		3	1	1	1
	PC4. Maintain a clean and hazard free working area		3	1	1	1
	PC5. Maintain tools and equipment		4	1	2	1
	PC6. Carry out running maintenance within agreed schedules		4	2	1	1

	PC7. Carry out maintenance and/or cleaning within one's responsibility		4	2	1	1
	PC8. Report unsafe equipment and other dangerous occurrences		4	2	1	1
	PC9. Ensure that the correct machine guards are in place		3	1	1	1
	PC10. Work in a comfortable position with the correct posture		3	1	1	1
	PC11. Use cleaning equipment and methods appropriate for the work to be carried out		3	1	1	1
	PC12. Dispose of waste safely in the designated location		4	2	1	1
	PC13. Store cleaning equipment safely after use		3	1	1	1
	PC14. Carry out cleaning according to schedules and limits of responsibility		4	2	1	1
			50	21	15	14
	Total	Weightage %		42%	30%	28%
4.TSC/ N9002 (Working in a team)	PC1. be accountable to the own role in whole process	50	5	1	3	1
	PC2. perform all roles with full responsibility		4	1	2	1
	PC3. be effective and efficient at workplace		4	2	1	1
	PC4. properly communicate about company policies		4	1	1	2
	PC5. report all problems faced during the process		4	1	1	2
	PC6. talk politely with other team members and colleagues		4	1	1	2
	PC7. submit daily report of own performance		5	2	2	1
	PC8. adjust in different work situations		4	1	2	1
	PC9. give due importance to others' point of view		4	1	1	2
	PC10. avoid conflicting situations		4	2	1	1
	PC11. develop new ideas for work procedures		4	2	1	1
	PC12. improve upon the existing techniques to increase process efficiency		4	2	1	1
			50	17	17	16
	Total	Weightage %		34%	34%	32%
5. TSC/ N9003 (Maintain health, safety and security at workplace)	PC1. Comply with health and safety related instructions applicable to the workplace	100	5	2	2	1
	PC2. Use and maintain personal protective equipment as per protocol		5	2	2	1
	PC3. Carry out own activities in line with approved guidelines and procedures		4	1	2	1
	PC4. Maintain a healthy lifestyle and guard against dependency on intoxicants		4	1	2	1
	PC5. Follow environment management system related procedures		4	1	2	1

	PC6. Identify and correct (if possible) malfunctions in machinery and equipment		5	2	2	1
	PC7. Report any service malfunctions that cannot be rectified		4	1	2	1
	PC8. Store materials and equipment in line with manufacturer's and organizational requirements		4	2	1	1
	PC9. Safely handle and move waste and debris		4	2	1	1
	PC10. Minimize health and safety risks to self and others due to own actions		5	2	2	1
	PC11. Seek clarifications, from supervisors or other authorized personnel in case of perceived risks		4	0	2	2
	PC12. Monitor the workplace and work processes for potential risks and threats		5	2	2	1
	PC13. Carry out periodic walk-through to keep work area free from hazards and obstructions, if assigned		5	2	2	1
	PC14. Report hazards and potential risks/ threats to supervisors or other authorized personnel		4	2	1	1
	PC15. Participate in mock drills/ evacuation procedures organized at the workplace		4	2	2	0
	PC16. Undertake first aid, fire-fighting and emergency response training, if asked to do so		5	2	2	1
	PC17. Take action based on instructions in the event of fire, emergencies or accidents		5	2	2	1
	PC18. Follow organization procedures for shutdown and evacuation when required		4	1	2	1
	PC19. identify different kinds of possible hazards (environmental, personal, ergonomic, chemical) of the industry		4	1	2	1
	PC20. recognize other possible security issues existing in the workplace		4	1	2	1
	PC21. recognize different measures to curb the hazards		4	1	2	1
	PC22. communicate the safety plan to everyone		4	1	2	1
	PC23. attach disciplinary rules with the implementation		4	1	2	1
			100	34	43	23
	Total	Weightage %		43%	34%	43%
6. TSC/ N9004 (Comply with industry and organizational requirement)	PC1. perform own duties effectively	50	4	2	1	1
	PC2. take responsibility for own actions		4	2	1	1
	PC3. be accountable towards the job role and assigned duties		4	1	2	1
	PC4. take initiative and innovate the existing methods		3	1	1	1
	PC5. focus on self-learning and improvement		4	2	1	1
	PC6. co-ordinate with all the team members and colleagues		4	2	1	1
	PC7. communicate politely		4	1	1	2

	PC8. avoid conflicts and miscommunication		4	2	1	1
	PC9. know the organizational standards		4	1	2	1
	PC10. implement them in your performance		4	2	1	1
	PC11. motivate others to follow them		3	1	1	1
	PC12. know the industry standards		4	1	3	0
	PC13. align them with organization standards		4	1	2	1
			50	19	18	13
	Total	Weightage %		36%	38%	36%
	Total		750	248	375	127
Grand Total			750			