







Model Curriculum

QP Name: Jacquard Weaver

QP Code: TSC/Q7306

QP Version: 3.0

NSQF Level: 3

Model Curriculum Version: 1.0

Textile Sector Skill Council || Textile Sector Skill Council (TSC) 14H, 14th Floor, Hansalaya Building, 15,
Barakhamba Road, New Delhi - 110 001
Office: +91-11-43536355-7







Table of Contents

Training Parameters	3
Program Overview	4
Training Outcomes	4
Compulsory Modules	4
Module Details	6
Module 1: Perform pre-weaving activities for jacquard weaving	6
Module 2: Perform operation of the jacquard handloom	8
Module 3: Maintaining the work area, tools and machines	9
Module 4: Greening and energy conservation in textile sector	10
Module 5: Health, Safety and Emergency Response at workplace	11
Module 6: Organizational Standards and Policies	12
Module 7: Teamwork, trust and communication	13
Module 8: Adaptability	14
Module 9: Employability Skills (30	
Hours)Error! Boo	okmark not defined.5
Annexure Er	ror! Bookmark not defined.6
Trainer Requirements	16
Assessor Requirements	17
Assessment Strategy	18
References	20
Glossary	20
Acronyms and Abbreviations	21







Training Parameters

Sector	Textile
Sub-Sector	Handloom & Khadi
Occupation	Weaver
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7318.58
Minimum Educational Qualification and Experience	 Grade 9 with No Experience (OR) Grade 8 pass and pursuing continuous schooling in regular school with vocational subject with no experience (OR) 8th grade pass with 1 year of relevant experience (OR) 5th grade pass with 4 years of relevant experience (OR) Ability to read and write with 5 years of experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	30.09.2021
Next Review Date	30.09.2024
NSQC Approval Date	
QP Version	3.0
Model Curriculum Creation Date	30.09.2021
Model Curriculum Valid Up to Date	30.09.2024
Model Curriculum Version	1.0
Minimum Duration of the Course	330 Hours
Maximum Duration of the Course	330 Hours







Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

- Undertake the pre-weaving activities for jacquard weaving.
- Interpret the weave designs.
- Operate the jacquard handloom.
- Perform weaving activities.
- Ensure quality end product after completion of process.
- Maintain work area, tools and machines as per guidelines.
- Follow greening and energy conservation activities as per guidelines.
- Follow protocols and guidelines for health, safety and security at workplace.
- Communicate and work effectively in a team.
- Comply with organizational and industry standards.
- Adhere to adaptability protocols and measures.

Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
TSC/N7308: Undertake pre-weaving activities for jacquard weaving – handloom Version 2.0 NSQF Level – 4	30:00	75:00	-	-	105:00
Module 1: Perform pre- weaving activities for jacquard weaving	30:00	75:00	-	-	105:00
TSC/N7309: Operate the handloom Version 2.0 NSQF Level – 4	30:00	75:00	-	-	105:00
Module 2: Perform operation of the jacquard handloom	30:00	75:00	-	-	105:00
TSC/N9015: Follow machine, safety, and organizational guidelines in textile sector Version 1.0 NSQF Level – 4	25:00	50:00	-	-	75:00







NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Module 3: Maintaining the work area, tools and machines	02:00	08:00	-	-	10:00
Module 4: Greening and energy conservation in textile sector	02:00	08:00	-	-	10:00
Module 5: Health, safety, and emergency response at workplace	15:00	20:00	-	-	35:00
Module 6: Organizational standards and Policies	06:00	14:00	-	-	20:00
TSC/N9016: Follow teamwork, adaptability, and communication guidelines in textile sector Version 1.0 NSQF Level – 4	05:00	10:00	-	-	15:00
Module 7: Teamwork, trust and communication	03:00	07:00	-	-	10:00
Module 8: Adaptability	02:00	03:00	-	-	05:00
DGT/VSQ/N0101 – Employability Skills Version 1.0 NSQF Level – 3	12:00	18:00	-	-	30:00
Module 9: Employability Skills	12:00	18:00	-	-	30:00
Total Duration	102:00	228:00	-	-	330:00







Module Details

Module 1: Perform pre-weaving activities for jacquard weaving Mapped to TSC/N7308, v 2.0

Terminal Outcomes:

Demonstrate the steps involved in pre-weaving activities in jacquard handloom operation.

Duration: 30:00	Duration: 75:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Discuss the process involved in jacquard handloom weaving to achieve good quality end product. Explain the scope of work responsibilities and reporting process associated with the role of the jacquard weaver. Discuss the importance of obtaining necessary information for the weaving process from master weaver. Describe the parts of a jacquard handloom. Discuss the objectives of 'take-up' and 'letoff' motions. Explain the different types of fibres, jacquard weaves, yarns, counts, etc. Discuss the functionality of a jacquard handloom along with the fabric production details. Describe the tools and equipment used in jacquard handloom weaving and the technical terms associated with it. Discuss various hazards and risks associated with the preparation process in jacquard handloom weaving. Discuss the various types of fabric defects along with its causes resulting from preloom activities and defects in the jacquard loom mechanism. Discuss different methods of tying the harness. Discuss the quality requirements of warp and weft packages. Discuss the impact of improper pre-loom activities in jacquard weaving. Discuss the objectives of skill development programs. 	 Demonstrate the steps to collect tools, equipment and materials for the jacquard weaving activity. Demonstrate the steps involved in gaiting the warp sheets as per standards procedure in jacquard handloom weaving. Demonstrate the steps to check the condition and working of various loom mechanisms such as shedding, picking, etc. Demonstrate the process of checking the 'let-off' and 'take-up' motions for smooth jacquard weaving operation. Perform the steps to implement drafting and denting of warp end per the jacquard design specifications. Demonstrate the method to calculate the required shuttles as per the weft pattern. Demonstrate the method of interpreting the jacquard design in the given graph sheet. Demonstrate the steps to segregate the jacquard punch cards for various designs. Illustrate the process and material flow in a typical handloom jacquard weaving process.







- Discuss the contribution of Indian handloom sector to the country's economy.
- Describe the basics of jacquard weaving i.e., process flow, types of processes involved, drafting, denting, filling pirns, preparing the looms, analysing the design and operating the handloom.
- Explain the position of a jacquard weaver in handloom operation and type of role to play.
- Discuss about possibilities of improvement in the handloom sub-sector.

Classroom Aids:

Charts, Posters, Projector, Blackboard.

Tools, Equipment and Other Requirements

Jacquard loom in running condition, warp beam, weft pirns, cleaning brush and wipes, waste collection, storage bins, seating arrangement for 25 people.







Module 2: Perform operation of the jacquard handloom Mapped to TSC/N7309, v2.0

Terminal Outcomes:

- Demonstrate the steps involved in operating the jacquard handloom as per standard process.
- Discuss the importance of following the standard operating procedure in jacquard handloom operation.

Duration: 30:00	Duration: 75:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Describe the hazards associated with jacquard weaving operation and the precautions to be followed. Explain the quality requirements to be adhered to for jacquard woven fabrics. Discuss the process of weaving different types of yarns on jacquard looms. Discuss the different types of shuttles and emery paper used in jacquard handloom weaving. Explain the various types of shedding mechanisms along with the principle such as tappet, cam, dobby, jacquard shedding. Describe the different types of weaves. Describe the types of defects associated with jacquard weaving and the method to resolve the same. Discuss the threshold levels for various parameters such as cloth width, ends per inch, etc. Discuss the different types of mendable and non-mendable jacquard fabric defects. 	 Demonstrate the steps of jacquard shedding operation as per the design specification. Demonstrate the steps of operations such as picking, beating action, maintaining weft tension, adjusting the wooden staves, etc. Demonstrate the steps of changing the shuttle as per design specification and weave. Demonstrate the procedure of mending a broken warp and weft as per standard procedures within prescribed time. Demonstrate the method of checking the weft pattern and change the shedding pattern and shuttle as per the specified design. Demonstrate the process of checking the raw materials for any defects. Demonstrate the method of mending the defects in the jacquard fabric. Demonstrate the process of unweaving as per the standard process. Demonstrate the method of storage of weft pirns and warp thrumbs at the specified location. Demonstrate the process of doffing and storing the jacquard cloth roller as per SOP. Demonstrate cleaning of the shuttle with emery sheet. Demonstrate the method of operating the jacquard handloom without weft crack. Demonstrate the method of changing the jacquard punch cards as per the pattern repeat.

Classroom Aids:

Charts, Posters, Projector, Blackboard.

Tools, Equipment and Other Requirements

Jacquard loom in running condition, warp beam, weft pirns, cleaning brush and wipes, waste collection, storage bins, seating capacity for 25 people.







Module 3: Maintaining the work area, tools and machines *Mapped to TSC/N9015, v1.0*

Terminal Outcomes:

- Maintain the work area, tools and machines in jacquard handloom operation.
- Explain the objective of tools, PPE used in the jacquard handloom operation.

Duration: <i>02:00</i>	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Differentiate various types of tools used for cleaning and maintenance. Explain the objectives of each maintenance and cleaning tool used in jacquard weaving operation. State the significance of safe handling procedure of tools and equipment. Recall the significance of written instructions on the tools and accessories used in jacquard handloom operation. Quote the significance of minimizing the wastage of material, effort and time. List the available types of material handling equipment and handling methods used in jacquard handloom operation. Discuss the types and importance of PPE used in the jacquard handloom operation. 	 Demonstrate the handling procedure of raw materials, tools, PPE and jacquard handlooms. Demonstrate method of identification of appropriate tools and equipment used for jacquard weaving operation. Demonstrate the scheduled cleaning of jacquard looms and accessories. Prepare a draft schedule for cleaning and waste collection for the assigned job role.
Classroom Aids:	

Charts, Posters, Projector, Blackboard.

Tools, Equipment and Other Requirements

Jacquard loom in running condition, Warp beam, weft pirns, cleaning brush and wipes, waste collection, storage bins, seating capacity for 25 people.







Module 4: Greening and energy conservation in textile sector Mapped to TSC/N9015, v1.0

Terminal Outcomes:

- Classify recyclable, non-recyclable and hazardous wastes in the jacquard handloom weaving operation.
- Optimize usage of material and resources at work place.

Duration: <i>02:00</i>	Duration: <i>08:00</i>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Discuss the concepts of pollution control, soil conservation, waste management, recycle, forest conservation, global warming, organic products, etc. List the different sources of energy. Discuss the impact of using non-biodegradable materials on the environment. Evaluate the different ways to conserve energy in a jacquard weaving process. Discuss the significance of conserving environment and energy resources. Discuss the significance of specified usage of resources at work area. 	 Demonstrate the process of segregation and storage of recyclable, non-recyclable, hazardous wastes in the jacquard weaving operation. Demonstrate the handling and storage of waste materials in the handloom jacquard weaving operation.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	

Video visuals on different sources of energy including solar power, covers, wrappers, seating arrangement for 25 people.







Module 5: Health, Safety and Emergency Response at workplace Mapped to TSC/N9015, v1.0

Terminal Outcomes:

- Perform first aid at workplace.
- Follow fire safety protocol in case of fire emergencies
- Recognise hazardous materials in the jacquard weaving process.

Duration: 15:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Discuss the significance of safe handling procedure of tools and equipment in jacquard weaving process. Discuss the importance and standard procedure for handling raw and finished materials. Discuss the impacts hazards of unsafe workplace conditions and procedures in the jacquard weaving operation (operational, environmental, personal, ergonomic, chemical, and electric, fire) and methods to avoid hazards. Distinguish between the various types of fire extinguishers. Distinguish different types of alarms and their significance. List the different items in a First Aid box. Discuss the correct work posture and importance of ergonomics for the assigned job role. 	 Classify Personal Protective Equipment (PPEs) like body protector, ear plugs, nose mask, head cap, etc. as per guidelines. Demonstrate handling of fire extinguishers. Locate emergency exits of workplace. Participate in mock fire drills / evacuation at workplace. Demonstrate application of first aid procedures for injury/accidents in mock situations. Demonstrate lifting of heavy weight materials as per standard procedure. Demonstrate healthy lifestyle practises.

Classroom Aids:

Charts, Posters, Projector, Blackboard.

Tools, Equipment and Other Requirements

PPE, first aid kit, fire extinguishers, Jacquard handloom with accessories and yarn cones, material handling equipment, seating arrangement for 25 people.







Module 6: Organizational Standards and Policies *Mapped to TSC/N9015, v1.0*

Terminal Outcomes:

- Recognize the significance of organization policies, quality standards in jacquard weaving process.
- Explain the need for following standards and policies in jacquard weaving process.

Duration: <i>06:00</i>	Duration: 14:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Discuss the significance of following organizational standard procedures, quality standards, rules, codes, policies and safety Standards in jacquard weaving process. Discuss the need for organizational quality systems, 5S, ISO, SA, etc. following in the handloom sector. Brief the importance of following work wear standards, behavioural protocols and etiquette in handloom sector. Describe the standard protocol for reporting lost and found material. Discuss the contents of organisation's formats and procedures for reporting production, defects, faults, material/tool requisition and quality parameters and task completed in the jacquard weaving process. Discuss the importance of discipline and adhering to timelines and state the effects of non-compliances. Classroom Aids: 	 Practice the systems like Quality circles, 5S, ISO, etc. in the routine work. Exhibit the steps to maintain a hygienic and healthy workplace. Prepare a lost and found report for submission to the competent authority. Demonstrate self-evaluation of following the timelines and discipline protocol.
Classroom Alas:	

Charts, Posters, Projector, Blackboard.

Tools, Equipment and Other Requirements

list of rules and regulations followed in the organisation, list of industry standards i.e., performance indicators of mills, process, worker, seating arrangement for 24 people.







Module 7: Teamwork, trust and communication Mapped to TSC/N9016, v1.0

Terminal Outcomes:

- Conform to standard guidelines while working with the team.
- Communicate effective with others at workplace.

Duration: <i>03:00</i>	Duration: <i>07:00</i>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
 Discuss the importance of teamwork and following industry protocols at workplace. Explain the limits and responsibilities for the assigned duties in the jacquard weaving process. Summarize emergency contact numbers, details of officials, reporting Protocols and formats. List hierarchy of communication and communication etiquettes in the textile sector. State the disadvantages of not adhering to team work and communication protocols. 	 Prepare a sample shift performance report for an allotted task. Demonstrate the use appropriate verbal and non-verbal communication skills while interacting with others at workplace.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	

Tools, Equipment and Other Requirements

Video visuals of basic communications and team working, terminologies used, models of communicating and team work in the handloom sector, seating arrangement for 25 people.







Module 8: Adaptability Mapped to TSC/N9016, v1.0

Terminal Outcomes:

- Operate at various environment and different hierarchy level for the assigned task.
- Discuss the need of adaptability at the workplace.

Duration: <i>02:00</i>	Duration: <i>03:00</i>	
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes	
 Discuss the significance of adaptability at work place with various levels of people. Discuss the importance of developing adaptability skills. Discuss the impacts of inadaptability at the work place. Discuss various types of situations which demand adaptability skills. Discuss various possibilities of basis of discrimination and ways to handle the same. 	 Demonstrate the ability to work in dynamic work environment by developing coping mechanisms, survival tactics and traits of flexibility. Create a sample backup work plan for the shortage of man power, raw materials, etc. Demonstrate communication with members of different gender, ethnicity and PwD. Demonstrate the process of preparation of sample application for reporting discrimination, to the concerned authority. 	
Classroom Aids:		
Charts, Posters, Projector, Blackboard.		
Tools, Equipment and Other Requirements		
Video visuals of adaptability with suitable examples, seating arrangement for 25 people.		







Module 9: Employability Skills Mapped to DGT/VSQ/N0101, v1.0

Duration: 12:00	Duration: 18:00		
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes		
 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. Discuss 21st century skills. Use appropriate basic English sentences/phrases while speaking 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 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. Discuss the significance of dressing up neatly and maintaining hygiene for an interview Discuss how to search and register for apprenticeship opportunities. Classroom Aids: 	 Show how to practice different environmentally sustainable practices Display positive attitude, self -motivation, problem solving, time management skills and continuous learning mindset in different situations. Demonstrate how to communicate in a well -mannered way with others. Demonstrate working with others in a team Show how to operate digital devices and use the associated applications and features, safely and securely Create a biodata Use various sources to search and apply for jobs 		

Classroom Aids:

Charts, Posters, Projector, Blackboard.

Tools, Equipment and Other Requirements

Class room requirements: 25 people seating capacity with a screen and projector







Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Specializa Qualification tion		Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Basic Literacy and Numeracy	5 th Class (Self- declaratio n)	6	Handloom Jacquard weaving	-	-	

Trainer Certification				
Domain Certification	Platform Certification			
TSC/Q07306, v2.0 – Jacquard Weaver - Handloom, Minimum pass percentage 80 per cent	MEP/Q2601, v1.0 – Trainer, Minimum pass percentage 80 per cent			

Employability Trainer Prerequisites

	Trainer Prerequisites					
Minimum Educational	Specialization	Relevant Industry Experience		Training Experience		Remarks
Qualification		Years	Specialization	Years	Specialization	
Graduate/CITS	Any Discipline			2	Teaching Experience	Prospective ES trainer should:
Current ITI Trainers	Employability Skills Training (3 days full- time course done between 2019-2022)					 have good communication skills be well versed in English have digital skills
Certified current EEE trainers (155 hours)	from Management SSC (MEPSC)					have attention to detailbe adaptable
Certified Trainer	Qualification Pack: Trainer (MEP/Q0102)					 have willingness to learn







Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience				Remarks
		Years	Specialization	Years	Specialization	
8th	NA	7	Handloom Jacquard	-	-	
			weaving			

Assessor Certification				
Domain Certification	Platform Certification			
TSC/Q07306, v2.0 – Jacquard Weaver - Handloom, Minimum pass percentage 80 per cent	MEP/Q2701, v1.0 – Assessor, Minimum pass percentage 80 per cent			







Assessment Strategy

The overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

- a) The emphasis is on 'learn-by-doing' and practical demonstration of skills and knowledge based on the performance criteria.
- b) The assessments papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performances and assessment criteria mentioned in the Qualification Packs.
- c) The assessments papers are also checked for the various outcome-based parameters such as quality, time taken, tools & equipment requirement, etc.
- d) The assessments are designed so as to assess maximum parts during the practical hands-on work. Duties and responsibility of Jacquard weaver handloom also assessed. The technical limitations at the training centres are taken care in theory and viva.
- e) The assessment agencies are instructed to hire qualified and experienced assessors as per TSC's criteria who have integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.
- f) The assessment agencies are instructed to ideally have assessors with the right mix of industry experience, academia and these are detailed in Assessment Agency Protocol of TSC
- g) The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to Assessment Framework, competency-based assessments, assessors guide etc. and they are assessed for Domain and assessment skills. Only those assessors who clears both the assessments with minimum 80% marks in each are permitted to carry out assessments.
- h) The assessors are provided with Assessor's guide developed by the Subject Matter Expert of the Assessment Agency or by Textile SSC as per Assessment Framework. The Assessors guides are developed to ensure the maximum possible consistency/transparency in the assessment by different assessors and elaborate on the following:
 - 1. Qualification Pack Structure.
 - 2. Guidance for the assessors to conduct theory, practical and viva assessments.
 - 3. Guidance for trainees to be given by assessor before the start of the assessments.
 - 4. Guidance on assessment process, practical brief with step of operational practical observation checklist Attendance Sheet and mark sheet.
 - 5. Viva guidance for uniformity and consistency across the batch.
 - 6. Guidance on assessment evidence collection.

The assessment results are backed by evidence collected by assessors.







- 1. The assessors need to collect a copy of the attendance sheets for the training done under the scheme. The attendance sheets are signed and stamped by the in charge/ Head of the training centre.
- 2. The assessors need to verify the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credential in the enrolment form.
- 3. The assessors need to take a camera to click photograph of the trainees working on the job and giving theory exam as evidence.
- 4. The assessors also need to carry a Photo ID card.
- 5. The assessors also need to take the photographs as evidence from appropriate angles/sides of the final work piece/job submitted by the trainee.
- 6. The details on assessment framework are elaborated in Textile SSC protocol for accreditation of Assessment Agencies and Assessment Framework.

All accredited Assessment Agencies follow the "Textile SSC's protocol for accreditation of Assessment Agencies and Assessment Framework". Each NOS in the Qualification Pack (QP) will be assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Performances Criteria in the NOS will be assigned marks for theory or practical based on relative importance, criticality of function and training infrastructure.







References

Glossary

Term	Description
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.







Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
SOP	Standard Operating Procedure
PPE	Personal Protective Equipment
QC	Quality Control
ISO	International Organization for Standardization
SA	Standards on Auditing