



Model Curriculum

QP Name: Hank Dyer

QP Code: TSC/Q7201

QP Version: 2.0

NSQF Level: 4

Model Curriculum Version: 1.0

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Training Parameters

Sector	Textile
Sub-Sector	Handloom & Khadi
Occupation	Processor
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7318.06
Minimum Educational Qualification and Experience	Basic Literacy & Numeracy with 0-6 Months of experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	
Next Review Date	
NSQC Approval Date	
QP Version	2.0
Model Curriculum Creation Date	
Model Curriculum Valid Up to Date	
Model Curriculum Version	1.0
Minimum Duration of the Course	300 Hours
Maximum Duration of the Course	300 Hours

Program Overview

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

Training Outcomes

- Receive, store and maintain records of raw materials.
- Prepare material for yarn processing.
- Carry out the yarn processing including dyeing.
- Carry out bundling of processed yarn.
- Maintain work area, tools and machines as per guidelines.
- Follow greening and energy conservation activities as per guidelines.
- Describe the importance of health, safety and security at workplace.
- Communicate and work effectively in a team.
- Comply with organizational and industry standards.

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
Bridge Module	03:00	01:00			04:00
Module 1: Introduction to hand loom process and objectives of hank dyeing operation	03:00	01:00			04:00
TSC/N7204: Carry out pre-treatment, dyeing and finishing of yarns Version 1.0 NSQF Level - 4	64:00	152:00			216:00
Module 2: Perform pre-treatment, dyeing and finishing of yarns	64:00	152:00			216:00
TSC/N9015: Follow machine, safety & organizational guidelines in textile sector Version 1.0 NSQF Level – 4	19:00	46:00			65:00
Module 3: Maintaining the work area, tools and machines	02:00	06:00			08:00
Module 4: Greening and energy conservation in textile sector	02:00	06:00			08:00

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Module 5: Health, safety and emergency response at workplace	09:00	23:00			32:00
Module 6: Organizational standards and policies	06:00	11:00			17:00
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
Total Duration	92:00	208:00			300:00

Module Details

Module 1: Introduction to hand loom operation and objectives of hank dyeing operation

Bridge Module

Terminal Outcomes:

- Describe the basics of hank dyeing.
- Discuss the process and product flow in the hank dyeing operation.
- Discuss the objectives of the hank dyeing operation.

Duration: 03:00	Duration: 01:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the objectives of skill development programs. • Discuss the contribution of Indian handloom sector to the country’s economy. • Describe the basics of hank dyeing i.e., process flow, types of processes involved, types of fibres used, type of chemicals and dyes used, terms and definitions of processes, colour shade, etc. • Explain the position of a hank dyer in hank dyeing operation and type of role to play. 	<ul style="list-style-type: none"> • Illustrate the process flow in a typical hank dyeing process.
Classroom Aids:	
Charts, Posters, Projector, Blackboard	
Tools, Equipment and Other Requirements	
Hank dyeing process flow chart, sample tools and accessories for pre-dyeing, dyeing and finishing, seating arrangement for 25 people, hank dyeing set up.	

Module 2: Perform pre-treatment, dyeing and finishing of yarns

Mapped to TSC/N7204, v1.0

Terminal Outcomes:

- Describe the roles and responsibilities of hank dyer.
- Receive, store and maintain records of raw materials.
- Prepare material for yarn processing.
- Carry out the yarn processing including dyeing.
- Carry out bundling of processed yarn.

Duration: 64:00	Duration: 152:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the roles and responsibilities of a hank dyer. • Describe the different processes of pre-dyeing, dyeing, and finishing of yarns along with their objectives and applicability. • Classify different types of yarns and major colour shades. • Explain the function of different chemicals, dyes and the various auxiliaries used. • Recognize operational tools and equipment required to carry out the activities and the importance of cleaning them. • Explain the importance of quality requirements associated with dyes and chemicals used for yarn processing. • Distinguish between the different types of waste generated and their disposal methods in yarn processing. • Discuss the pre-dyeing, dyeing and finishing process including the requirements, recipes, importance of shade matching, squeezing methods, colour fastness properties of various fibres, process curve, etc. and repercussions of non-compliance of process. • Explain precautions taken during the pre-dyeing, dyeing and finishing process in different climatic condition. • Discuss the various processes associated with yarns such as bundling, packaging and labelling. 	<ul style="list-style-type: none"> • Demonstrate the steps to receive the yarn, chemicals, dyes etc. and segregate, label, weigh and record their details. • Demonstrate how to get the required tools and equipment necessary to carry out the yarn processing. • Perform the steps to record the details of the processes based on the dye master’s instructions. • Employ basic techniques to arrange the received material and calculate the material required as per instructions. • Perform tasks such as cleaning the bath, using safety gloves, using prescribed quality of water and maintaining processing conditions as per SOP. • Demonstrate how to perform processing of the activities such as yarn pre-dyeing, dyeing and finishing. • Perform the steps related to drying such as squeezing, preparing the dyeing area, arranging the yarns and rotating the hanks. • Demonstrate how to clean the work area as per SOP. • Demonstrate how to bundle the yarns, labels them as per specifications and store them appropriately as per SOP. • Perform the steps to related to writing reports such as recipe, dyeing process flow, etc.
Classroom Aids:	
Charts, Posters, Projector, Blackboard	
Tools, Equipment and Other Requirements	

Yarn in hank form, Hank dyeing process flow chart, sample tools and accessories for dyeing and finishing, seating arrangement for 25 people, hank dyeing set up.

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 hank dyeing process.
- Explain the objective of tools, PPE used in hank dyeing process.

Duration: 02:00	Duration: 06:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Differentiate various types of tools used for cleaning and maintenance. • Explain the objectives of each maintenance and cleaning tool used in hank dyeing operation. • Discuss the significance of safe handling procedure of tools and equipment. • Brief the importance and written instructions on the dyes and chemicals. • Discuss the significance of minimizing the wastage of material, effort and time. • List the available types of Material handling equipment and handling methods used in hank dyeing process. • Discuss the types and importance of PPE used in the hank dyeing process. 	<ul style="list-style-type: none"> • Demonstrate the handling procedure of raw materials, tools, PPE and machines. • Identify the appropriate tools and equipment for the hank dyeing process. • Demonstrate the scheduled cleaning of hank dyeing setup and related equipment.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Yarn in hank form, sample tools and accessories for pre-treatment, dyeing and finishing, seating arrangement for 25 people, hank dyeing set up, material handling equipment, tool kits of operational, cleaning and maintenance activities.	

Module 4: Greening and energy conservation in textile sector

Mapped to TSC/N9015, v1.0

Terminal Outcomes:

- Identify the recyclable, non-recyclable and hazardous wastes in the hank dyeing process.
- Optimize usage of material and resources at work place.

Duration: 02:00	Duration: 06:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the terms 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 hank dyeing process. • Discuss the significance of conserving environment and energy resources. • Discuss the significance of specified usage of resources at work area. 	<ul style="list-style-type: none"> • Demonstrate the segregation of recyclable, non-recyclable, hazardous wastes in the hank dyeing process. • Demonstrate the handling and storage of waste materials in hank dyeing process. • Create a list of potential ways to reduce wastage and conserve energy in hank dyeing process.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Video visuals on solar power, package materials - covers, bags, wrappers, box, 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 hank dyeing process.

Duration: 09:00	Duration: 23:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the significance of safe handling procedure of tools and equipment in hank dyeing process. • Discuss the importance and standard procedure for handling the raw and finished materials. • Discuss the impacts of unsafe workplace conditions and procedures in hank dyeing process (operational, environmental, personal, ergonomic, chemical, electric, fire) and methods to avoid hazards. • Distinguish between the various type of fire extinguishers. • Distinguish different types of alarms and their significance. • Classify the items in a First Aid box. • Discuss the correct work posture and importance of ergonomics in the hank dyeing process. 	<ul style="list-style-type: none"> • Classify abnormal sounds emanating from faulty/worn out parts. • 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 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.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
PPE, first aid kit, fire extinguishers, hank dyeing set up, yarn in hank form, tools and accessories for pre-treatment, dyeing and finishing, 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 process, quality standards in hank dyeing process.
- Maintain hygienic working atmosphere as per protocol of the handloom sector.

Duration: 06:00	Duration: 11:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the significance of following standard procedures, quality standards, rules, codes, policies and safety standards in hank dyeing process. • Discuss the need for organizational quality systems, 5S, ISO, SA, etc. • Brief the importance of following work wear standards, behavioural protocols and etiquette in handloom sector. • Discuss the procedures for reporting production, defects, faults, material/tool requisition and quality parameters and task completed. 	<ul style="list-style-type: none"> • Practice the systems like Quality circles, 5S, ISO, etc. in the routine work. • Demonstrate the steps to maintain a hygienic and healthy workplace.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Chart contains list of standards such as standard process, quality standard, seating arrangement for 25 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 effectively with others at workplace.

Duration: 03:00	Duration: 07:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of teamwork and following SOP at workplace. • Explain the limits and responsibilities for the assigned duties in the hank dyeing process. • Summarize emergency contact numbers, details of officials, reporting protocols and formats. • List hierarchy of communication and communication etiquettes in the hank dyeing process. 	<ul style="list-style-type: none"> • Apply methods of team work to complete/for a given task. • Prepare a sample performance report for an allotted task. • Demonstrate the use of 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, models of communicating and team working area, seating arrangement for 25 people.	

Module 8: Adaptability

Mapped to TSC/N9016, v1.0

Terminal Outcomes:

- Operate at various environment and with different people for the assigned task.
- Create a work plan for the allotted task.

Duration: 02:00	Duration: 03:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Video visuals of adaptability with suitable examples, seating arrangement for 25 people.	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Basic Literacy and Numeracy	NA	6	Handloom - Processing			

Trainer Certification	
Domain Certification	Platform Certification
TSC/Q07201, v2.0 – Hank Dyer, Minimum pass percentage 80 per cent.	MEP/Q2601, v1.0 – Trainer, Minimum pass percentage 80 per cent.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
8 th Standard	NA	3	Handloom - Processing			

Assessor Certification	
Domain Certification	Platform Certification
TSC/Q7201, v2.0 – Hank Dyer, 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 Hand dyer are 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 clear both the assessments with minimum 80% marks in each are permitted to carry out assessments.
- h) The assessors are provided with Assessors 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
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
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).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
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