

Syllabus for Handloom Weaving Operator

Course Name	Handloom weaving Operator
Sector	Textiles & Handlooms
Course Code	TXT/2024/HWOP/346
Level	3
Occupation	Hand loom weaving
Job Description	The candidate will be responsible for operating and maintaining hand looms to weave a variety of fabrics. They will also be responsible for setting up loom, selecting and arranging warp and weft yarns, adjusting loom mechanisms for proper shedding, picking and beat-up motions. They are also responsible for operation of Jacquard weaving machines, adjusting jacquard looms, ensuring the production of high quality cotton fabrics.
Course Duration	Total Duration Min 330 Hrs Max 390 Hrs (with optional) (OJT-60 and ES-60)
Trainees' Entry Qualification	Grade 10 OR Grade 8 pass and pursuing continuous schooling in regular school with vocational subject OR 8th grade pass with 2 yrs relevant experience OR 5th grade pass with 5 years relevant experience OR Previous relevant Qualification of NSQF Level 2 with one yr experience OR Previous relevant Qualification of NSQF Level 2.5 with 6 months experience
Trainers Qualification	B. Tech/B.E. in Textile Technology/ Textile Engineering from AICTE/UGC recognized Engineering College/ university with one-year experience in the relevant field. OR 03 years Diploma in Textile Technology/ Textile Engineering/ Knitting Technology from AICTE recognized board of technical education with two years' experience in the relevant field. OR NTC/NAC in Textile related course with three years experience in relevant field

Structure of Course:

Module No.	Module name	Outcome	Compulsory/ Elective/Optional	Theory (Hrs)	Practical (Hrs)	OJT (Hrs)	Total (Hrs) [Multiple of 30]
1	Workplace safety and hygiene	Ensure workplace safety and maintain practice for personal Hygiene at Workplace	Compulsory	10	20		30
2	Handloom and their classification	Identify various Hand Loom and their classification	Compulsory	20	40		60
3	Introduction to reed and heald	Identify Types of reed and heald wire and their uses	Compulsory	10	20		30
4	Motion of Hand loom	Demonstrate the different motion of Hand Loom.	Compulsory	20	40		60
5	Fabric fault and remedies	Identify Fabric fault and their remedies.	Compulsory	10	20		30
6	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	Compulsory	--	--	60	60
7	Employability Skill	As per guided curriculum	Compulsory	60	--	--	60
8	Operation of Jacquard	Identify and execute the operation of jacquard.	Optional	20	40		60
TOTAL				150	180	60	390

Different Combination in which course may be offered

Course Name	Course Code	Course Duration	Full Marks
Handloom weaving Operator	TXT/2024/HWOP/346	330 Hours	1000
Handloom weaving Operator [with Optional: Operation of Jacquard]	TXT/2024/HWOP/346 [with Optional TXT/3708/OC6]	390 Hours	1100

SYLLABUS:**Module No. 1: Workplace safety and hygiene**

Outcome: Ensure workplace safety and maintain practice for personal Hygiene at Workplace

Theory Content:

- Discuss workplace hygiene sanitation and job specific safety procedures .

- Personal hygiene ,oil, manufacturing unit and storage

Practical Content:

- Demonstration of cleaning techniques
- Create a check list for routine cleaning tasks and their frequency
- Demonstrate the use protective clothing/equipment for specific tasks and work conditions
- Identify PPE application and its maintenance procedure
- Demonstrate the correct use of safety glasses, gloves and hearing protection
- Simulate an emergency scenario require the use of PPE

Module No. 2: Handloom and their classification

Outcome: Identify various Hand Loom and their classification

Theory Content:

- Introduction to Handlooms
- Classification of Handlooms based on structure, mechanism and End uses
- Know the principles of fabric formation. Know the different types of Hand Loom. Know the different parts of Hand Loom.
- Weaving techniques on Handlooms
- Know the principles of shedding, picking and beat up motion
- How to set yarns in a loom. Know how to doffing and change of weavers beam.

Practical Content:

- Loom setup and operation
- Operating procedure of Hand Loom.
- Basic weaving techniques
- Practical knowledge of doffing and change of weavers beam.

Module No. 3: Introduction to reed and heald

Outcome: Identify Types of reed and heald wire and their uses

Theory Content:

- Function of reed in handloom weaving
- Know the types of reed and heald wire determine reed count and heald count in various method. Calculate dent spacing of reed.
- Interaction between reed and heald

Practical Content:

- Handling and maintenance of reeds and healds
- Selection of reed and heald
- Reed and heald calculations
- Practical knowledge of reed and heald wire setting.
- Calculate dent spacing of reed.

Module No. 4: Motion of Hand loom

Outcome: Demonstrate the different motion of Hand Loom.

Theory Content:

- Introduction to Loom motions
- Primary handloom motions
- Auxiliary motions
- Learn the principal of shedding, picking and beat up motion, know the mechanism and setting of pirn changing
- Know how to doffing and change of weavers beam.

Practical Content:

- Setting up Handlooms
- Demonstrate of picking motion variations of handloom
- Explore auxiliary motions
- Practical knowledge of material passage through Hand Loom.
- Changing the pirn in shuttle.
- Doffing and change of weavers beam.

Module No. 5: Fabric fault and remedies

Outcome: Identify Fabric fault and their remedies.

Theory Content:

- Introduction to Fabric inspection
- Importance of fabric inspection in quality control
- Identification of fabric faults
- Different types of fabric fault and their remedies
- Analysing fabric defects

Practical Content:

- Demonstrate Fabric inspection procedures
- Practical knowledge of knotting of yarn by knoter.
- Identify the fault
- Troubleshoot the fault and repair

Module 6: Operation of Jacquard

Outcome: Identify and execute the operation of jacquard.

Outcome: Identify ,execute the operation of jacquard.

Theory Content:

- Know the principles of Jacquard, its types and classification.
- Uses of Jacquard. Trace the material passage through Jacquard Hand Loom and identify various Parts
- .Preparation of the point paper design depending on weave design.
- Know the card punching process. Know the setting of jacquard cam.

Practical Content:

- Operating procedure of Jacquard Hand Loom.
- Establish settings on picking force shuttle box, alignment, race board alignment.
- Card punching, Setting of jacquard cam.

Module 7: OJT

Outcome: Work in real job situation with special emphasis on basic safety and hazards in this domain

Practical Content:

Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for **60 Hours.**)

Module 8: Employability Skills (60 Hrs)

Key Learning Outcomes

Introduction to Employability Skills

Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship

Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century

Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills

Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e-mail using basic English

Career Development & Goal Setting

Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills
 Hours

Duration: 5

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion

Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy
 Hours

Duration: 5

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills

Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship
 Hours

Duration: 7

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

Customer Service
 Hours

Duration: 5

30. Describe the significance of analyzing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting Ready for apprenticeship & Jobs
 Hours

Duration: 8

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

Learning Outcome – Assessment Criteria

Module No.	Outcome	Assessment Criteria
1	Ensure workplace safety and maintain practice for personal Hygiene at Workplace	After completion of this module students will be able to: 1.1 Demonstrate of effective cleaning techniques 1.2 Execute machine specific cleaning procedures 1.3 Create a checklist for routine cleaning tasks 1.4 Demonstrate the use of protective clothing/equipment for the specific tasks and work conditions 1.5 Describe the importance of PPE kit 1.6 Demonstrate the correct use of safety gear. 1.7 Identify electrical hazards, including power supply issues, loose cables and equipment malfunctioning 1.8 Ensure use of general health and safety equipment and materials in the workplace first aid equipment
2	Identify various Hand Loom and their classification.	After completion of this module students will be able to: 2.1 Explain the fundamental principles of governing fabric formation 2.2 Identify different types of Hand looms 2.3 Recognize the various components and parts of a hand loom 2.4 Demonstrate the procedure for setting yarns in a loom 2.5 Maintain safety practices during the task related to hand loom operation, doffing and changing the weavers beam
3	Identify Types of reed and heald wire and their uses	After completion of this module students will be able to: 3.1 Identify various types of reeds and heald wires used in weaving 3.2 determine reed count and held count using various methods 3.3 Calculate dent spacing in a reed 3.4 Set reed and heald wires for optimal weaving performance

Module No.	Outcome	Assessment Criteria
		3.5 Identify and troubleshoot issue related to reed and heald wire setting during practical applications
4	Demonstrate the different motion of Hand Loom.	After completion of this module students will be able to: 4.1 Explain the principles of shedding, picking and beat-up motion in weaving 4.2 Describe the mechanism involved in pirn changing during weaving 4.3 Navigate the hand loom controls, including shedding, picking and beat up motions 4.4 Troubleshoot and resolve issue related to material passage and machine operations
5	Identify Fabric fault and their remedies.	After completion of this module students will be able to: 5.1 Identify different types of fabric faults, including common defects in woven or knitted fabrics 5.2 Explain the effective remedies and corrective measures for various fabric faults 5.3 Apply different knotting techniques, considering the type of yarn and specific requirements of the production process 5.4 Assess the quality of knots tied
6	Identify and execute the operation of jacquard.	After completion of this module students will be able to: 6.1 Explain the fundamental principles of jacquard weaving 6.2 Recognize different types of jacquard weaving systems 6.3 Prepare point paper design based on weave design requirements 6.4 Describe the card punching process in jacquard weaving 6.5 Demonstrate the operation of jacquard hand loom 6.6 Explain the procedure of aligning the race board in jacquard hand loom 6.7 Demonstrate the setting the jacquard cam
7	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).
8	Employability Skill	As per guided curriculum

List of Tools, Equipment & materials needed for 30 Trainees (Practical)

Sl. No.	Name of Tools/Equipment/Machines	Quantity
1	Hand Loom	02 Nos.
2	Pirn	04 Nos.
3.	Shuttle	04 Nos.
4	Hand Knotter	04 Nos.

Marks Distribution

Outcome	Outcome Code	Type	Total Th marks	Total Pr marks	Total OJT marks
Ensure workplace safety and maintain practice for personal Hygiene at Workplace	TXT/3708/OC1	Compulsory	20	110	0
Identify various Hand Loom and their classification	TXT/3708/OC2	Compulsory	40	150	0
Identify Types of reed and heald wire and their uses	TXT/3708/OC3	Compulsory	30	120	0
Demonstrate the different motion of Hand Loom.	TXT/3708/OC4	Compulsory	40	150	0
Identify Fabric fault and their remedies.	TXT/3708/OC5	Compulsory	20	120	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	TXT/3708/OC7	Compulsory	0	0	150
Employability Skills – 60 Hrs	DGT/VSQ/N0102	Compulsory	50	0	0
Identify and execute the operation of jacquard.	TXT/3708/OC6	Optional	20	80	0
Full Marks: Minimum 1000 (Th 200, Prac. 800) without Optional Maximum marks 1100 ((Th 220, Prac. 880) with Optional					