

## Syllabus For Handloom Weaving Operator

<b>Course Name</b>	Handloom weaving Operator
<b>Sector</b>	Textiles & Handlooms
<b>Course Code</b>	TXT/2024/HWOP/346
<b>Level</b>	3
<b>Occupation</b>	Hand loom weaving
<b>Job Description</b>	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.
<b>Course Duration</b>	<b>Total Duration Min 330 Hrs Max 390 Hrs (with optional) . ( OJT-60 and ES-60)</b>
<b>Trainees' Entry Qualification</b>	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
<b>Trainers Qualification</b>	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	<b>Workplace safety and hygiene</b>	Ensure workplace safety and maintain practice for personal Hygiene at Workplace	Compulsory	10	20		30
2	<b>Handloom and their classification</b>	Identify various Hand Loom and their classification	Compulsory	20	40		60
3	<b>Introduction to reed and heald</b>	Identify Types of reed and heald wire and their uses	Compulsory	10	20		30
4	<b>Motion of Hand loom</b>	Demonstrate the different motion of Hand Loom.	Compulsory	20	40		60
5	<b>Fabric fault and remedies</b>	Identify Fabric fault and their remedies.	Compulsory	10	20		30
6	<b>Operation of Jacquard</b>	Identify and execute the operation of jacquard.	Optional	20	40		60
7	<b>OJT</b>	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	Compulsory	--	--	60	60
8	<b>Employability Skill</b>	As per guided curriculum	Compulsory	60	--	--	60
<b>TOTAL</b>				150	180	60	390

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 knotter.
- 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	<p><b>After completion of this module students will be able to:</b></p> <ul style="list-style-type: none"> <li>1.1 Demonstrate of effective cleaning techniques</li> <li>1.2 Execute machine specific cleaning procedures</li> <li>1.3 Create a checklist for routine cleaning tasks</li> <li>1.4 Demonstrate the use of protective clothing/equipment for the specific tasks and work conditions</li> <li>1.5 Describe the importance of PPE kit</li> <li>1.6 Demonstrate the correct use of safety gear.</li> <li>1.7 Identify electrical hazards, including power supply issues, loose cables and equipment malfunctioning</li> <li>1.8 Ensure use of general health and safety equipment and materials in the workplace first aid equipment</li> </ul>
2	Identify various Hand Loom and their classification.	<p><b>After completion of this module students will be able to:</b></p> <ul style="list-style-type: none"> <li>2.1 Explain the fundamental principles of governing fabric formation</li> <li>2.2 Identify different types of Hand looms</li> <li>2.3 Recognize the various components and parts of a hand loom</li> <li>2.4 Demonstrate the procedure for setting yarns in a loom</li> <li>2.5 Maintain safety practices during the task related to hand loom operation, doffing and changing the weavers beam</li> </ul>
3	Identify Types of reed and heald wire and their uses	<p><b>After completion of this module students will be able to:</b></p> <ul style="list-style-type: none"> <li>3.1 Identify various types of reeds and heald wires used in weaving</li> <li>3.2 determine reed count and held count using various methods</li> <li>3.3 Calculate dent spacing in a reed</li> <li>3.4 Set reed and heald wires for optimal weaving</li> </ul>

Module No.	Outcome	Assessment Criteria
		performance 3.5 Identify and troubleshoot issue related to reed and heald wire setting during practical applications
4	Demonstrate the different motion of Hand Loom.	<b>After completion of this module students will be able to:</b> 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.	<b>After completion of this module students will be able to:</b> 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.	<b>After completion of this module students will be able to:</b> 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	<b>OJT</b>	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).
8	<b>Employability Skill</b>	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	Total Th marks	Total Pr marks	Total OJT marks
Ensure workplace safety and maintain practice for personal Hygiene at Workplace	TXT/3708/OC1	20	80	0
Identify various Hand Loom and their classification	TXT/3708/OC2	30	130	0
Identify Types of reed and heald wire and their uses	TXT/3708/OC3	20	90	0
Demonstrate the different motion of Hand Loom.	TXT/3708/OC4	30	130	0
Identify Fabric fault and their remedies.	TXT/3708/OC5	20	90	0
Identify and execute the operation of jacquard.	TXT/3708/OC6	30	130	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	TXT/3708/OC7	0	0	150
Employability Skills – 60 Hrs	DGT/VSQ/N0102	50	0	0