

## Syllabus for Multi Shaft Silk Weaver

<b>Course Name</b>	Multi Shaft Silk Weaver
<b>Sector</b>	Textiles & Handlooms
<b>Course Code</b>	TXT/2024/MSSW/381
<b>Level</b>	3
<b>Occupation</b>	Multi Shaft Silk Weaver
<b>Job Description</b>	The Multi-shaft Silk Weaver responsible for operating and maintaining multi-shaft looms to produce exquisite silk fabrics. The candidate will possess in-depth knowledge of silk weaving techniques, proficiency in interpreting and implementing intricate weaving patterns, designs and a keen eye for detail to detect and rectify fabric defects.
<b>Course Duration</b>	<b>Total Duration 330 Hrs (T-60, P-150, 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/Engineering from AICTE/UGC recognized Engineering College/ university with one-year experience in the relevant field.  OR  Diploma in Textile Technology/Engineering from AICTE recognized board of technical education with two years' experience in the relevant field.  OR  NTC/NAC in the trade with 5 years experience in the relevant field.

**Structure of Course:**

Module No.	Module name	Outcome	Compulsory/ Elective	Theory (Hrs)	Practical (Hrs)	OJT (Hrs.)	Total (Hrs) [Multiple of 30]
1	<b>Maintenance of Hygiene and</b>	Maintain safety and personal Hygiene at Workplace	Compulsory	10	20		30

Module No.	Module name	Outcome	Compulsory/ Elective	Theory (Hrs)	Practical (Hrs)	OJT (Hrs.)	Total (Hrs) [Multiple of 30]
	<b>safety at Workplace</b>						
2	<b>Silk weaving with multi shaft</b>	Execute the operation of Silk Weaving with Multi Shaft.	Compulsory	20	70		90
3	<b>Types of Reed and heald</b>	Identify types of reed & heald wire and their uses	Compulsory	10	20		30
4	<b>Motion of hand loom</b>	Demonstrate the different motion of Hand Loom.	Compulsory	10	20		30
5	<b>Fabric fault and remedies</b>	Identify Fabric fault and their remedies.	Compulsory	10	20		30
6	<b>OJT</b>	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	Compulsory	-	-	60	60
7	<b>Employability Skill</b>	As per guided curriculum	Compulsory	60	-		60
<b>TOTAL</b>				<b>120</b>	<b>150</b>	<b>60</b>	<b>330</b>

**SYLLABUS:****Module No. 1: Maintenance of Workplace Hygiene and safety****Outcome:** Maintain safety and personal Hygiene at Workplace**Theory Content:**

- Significance of routine cleaning activities of Personal hygiene ,oil, manufacturing unit and storage
- Identifying potential hazards associated with a lack of regular cleaning on tools, machines and work areas.
- Types of cleaning agents and tools
- Introduction of Occupational safety
- Overview of relevant occupational safety regulations and standards
- The responsibility of technician in compliance with safety guidelines
- Identification of Occupational safety hazards
- Identification of common hazards in in the machine
- Describe types of hazards
- Application of PPE (Personal protective equipment)
- Selection and use of PPE
- Safe work practices with electrical systems
- Applications of electrical tools
- Describe the importance of immediate response during emergencies
- Fire prevention measures and firefighting equipment's

**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
- Present proper method of rescue techniques applied during fire hazard and other accidental situation.

**Module No. 2: Silk weaving with multi shaft**

**Outcome:** Execute the operation of Silk Weaving with Multi Shaft.

**Theory Content:**

- Description of multi-shaft loom
- Different types of Multi-shaft loom
- Procedure of weave on Multi-shaft loom
- Different parts of multi shaft loom

**Practical Content:**

- Demonstrate Operating procedure of silk weaving with multiple shaft loom
- Establish settings on picking force shuttle box, alignment, race board alignment
- Explain the procedure of Multiple shaft setting

**Module No. 3: Types of Reed and heald**

**Outcome:** Identify types of reed & heald wire and their uses

**Theory Content:**

- Types of reed and heald wire.
- Identification of reed types and heald wires
- Application weaving
- Determine reed count and heald count In various methods.
- Calculate dent spacing of reed.

**Practical Content:**

- Demonstrate reed and heald wire setting.
- Recognize by evenly spaced dents across the entire width
- Calculate dent spacing of reed.
- Choose reed type based on fabric requirements
- Select heald wire based on fabric weight and complexity

**Module No. 4: Motion of hand loom**

**Outcome:** Demonstrate the different motion of Hand Loom.

**Theory Content:**

- Shuttle motion, heddle motion, treadle motion and take-up motion

- Principal of shedding
- Picking and beat up motion
- Mechanism and setting of pirn changing
- Know how to doffing and change of weavers beam.

**Practical Content:**

- Load the shuttle with weft yarn and pass it through the shed created by the heddles
- Illustrate how raising and lowering specific shafts create sheds for the shuttle to pass through
- Adjust take up motion to maintain proper fabric tension and alignment
- Demonstrate material passage through silk weaving with multiple shaft 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:**

- Different types of fabric fault and their remedies.
- Broken warp or weft threads
- Uneven spacing or tight/loose section in the fabric
- Excessively long warp threads visible on the fabric
- Uneven or irregular edges along the fabric selvage
- Variation in fabric density or thickness across the width

**Practical Content:**

- Break a few warp and weft threads and guide students in rethreading and adjusting tension.
- Knotting of yarn by knotter.
- Create intentional skips and demonstrate the use of a repair hook to fix the issue.
- create uneven selvages and guide students in correcting the issue using appropriate techniques.
- Adjust the loom to create uneven beat-up and guide students in rectifying the problem for uniform fabric density.

**Module 6: 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 7: Employability Skills (60 Hrs)**

**Key Learning Outcomes**

**Introduction to Employability Skills**  
Hours

Duration: 1.5

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**

Duration:

5 Hours

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**

Duration:5 Hours

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**

Duration:

7 Hours

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**

Duration:

5 Hours

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**

Duration:

8 Hours

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	Maintain safety and 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 Detect health hazards</li> <li>1.9 Ensure use of general health and safety equipment and materials in the workplace first aid equipment</li> </ul>
2	Execute the operation of Silk Weaving with Multi Shaft.	<p><b>After completion of this module students will be able to:</b></p> <ul style="list-style-type: none"> <li>2.1 Provide a comprehensive details of a multi-shaft loom</li> <li>2.2 Distinction between the different types, highlighting their unique features and applications of multi shaft looms</li> <li>2.3 Explain step-by-step, covering the entire procedure from warp setup to fabric formation of multi shaft loom</li> <li>2.4 Identify essential component of a multi shaft loom</li> <li>2.5 Describe the procedure of multiple shaft setting</li> <li>2.6 Explain how multiple shaft settings impact the weaving process and fabric outcome</li> </ul>
3	Identify types of reed & 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 Explain various types of reeds and heald wires commonly used in weaving</li> <li>3.2 Identify reed types and heald wires based on provided information</li> <li>3.3 Determine reed count and heald count in various methods</li> <li>3.4 Interpret the concept of dent spacing and its significance in the weaving process</li> <li>3.5 Select a reed type according to the specified fabric requirements</li> <li>3.6 Justify the choice by considering factors such as fabric density and pattern</li> <li>3.7 Connect fabric weight and complexity to the appropriate selection of heald wire</li> </ul>
4	Demonstrate the different motion of Hand Loom.	<p><b>After completion of this module students will be able to:</b></p> <ul style="list-style-type: none"> <li>4.1 Demonstrate the mechanisms and functions of</li> </ul>

Module No.	Outcome	Assessment Criteria
		shuttle, heddle, treadle, and take-up motions. 4.2 Explain the principle of shedding, illustrating how the heddle motion creates sheds for the shuttle 4.3 Describe the picking and beat-up motions in the context of silk weaving. 4.4 Articulate the step-by-step procedure for doffing and changing the weaver's beam. 4.5 Adjust the take-up motion to maintain optimal fabric tension and alignment. 4.6 Demonstrate the passage of material through silk weaving on a multiple shaft hand loom 4.7 Change the pirn in the shuttle, considering efficiency and accuracy.
5	Identify Fabric fault and their remedies.	<b>After completion of this module students will be able to:</b> 5.1 Evaluate various types of fabric faults and their respective remedies. 5.2 Identify broken warp or weft threads. 5.3 Identify uneven spacing or tight/loose sections in fabric. 5.4 Explain techniques to correct selvage irregularities. 5.5 Recognize variations in fabric density or thickness. 5.6 Demonstrate proper yarn knotting techniques using a knotter. 5.7 Adjust the loom to intentionally create uneven beat-up.
6	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).
7	Employability Skill	As per guided curriculum

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

S.No.	Description of Tools	Quantity
1.	Multiple Shaft Hand Loom	2
2.	Pirn	4
3.	Shuttle	4
4.	Hand Knotter	4
5.	PPE Kits	30
6.	First aid box	1



## Marks Distribution

Outcome	Outcome Code	Total Th marks	Total Pr marks	Total OJT marks
Maintain safety and personal Hygiene at Workplace	TXT/3720/OC1	30	120	0
Execute the operation of Silk Weaving with Multi Shaft.	TXT/3720/OC2	30	170	0
Identify types of reed & heald wire and their uses	TXT/3720/OC3	30	120	0
Demonstrate the different motion of Hand Loom.	TXT/3720/OC4	30	120	0
Identify Fabric fault and their remedies.	TXT/3720/OC5	30	120	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	TXT/3720/OC6	0	0	150
Employability Skills – 60 Hrs	DGT/VSQ/N0102	50	0	0