

Syllabus For Jute Card Tenter

Course Name	Jute Card Tenter
Course Code	TXT/2024/JUCT/396
Sector	Textiles & Handlooms
Sub-sector	Jute
Level	2.5
Occupation	Jute Card Tenter
Job Description	A Jute Card Tenter will operate the Jute Carding Machine efficiently to maintain the productivity and quality of the carded sliver. He should also have knowledge about the process flow of jute spinning line.
Course Duration	Total Duration 270 Hours (T- 60, P- 120 , OJT-60 and ES-30)
Trainees' Entry Qualification	<ul style="list-style-type: none"> • 9th Grade pass • 8th Grade pass and pursuing continuous schooling • Grade 5 with 4 year relevant experience • Ability to read and write with 4 year relevant experience • Previous relevant Qualification of NSQF Level 2 with 6 months relevant experience • Previous relevant Qualification of NSQF Level 1 with 1.5 year relevant experience
Trainers Qualification	<p>B. Tech in Textile Technology / Textile Engineering from AICTE/UGC recognized Engineering College/ university with one-year experience in the relevant field.</p> <p>OR</p> <p>03 years Diploma in Jute Technology / Textile Technology/ Textile Engineering from AICTE recognized College / Institute with two years experience in the relevant field.</p>

Structure of Course:

Module No.	Module name	Outcome	Theory (Hrs)	Practical (Hrs)	OJT (Hrs.)	Total (Hrs) [Multiple of 30]
1	Carding basics and Roles & responsibilities	Explain the process of Jute Carding and identify the roles & responsibility of card tenter	10	20		30

Module No.	Module name	Outcome	Theory (Hrs)	Practical (Hrs)	OJT (Hrs.)	Total (Hrs) [Multiple of 30]
2	Carding operation	Demonstrate machine parts with functions and operate the carding machine	20	40		60
3	Sliver feeding & doffing	Attend the card on sliver breakage and perform doffing/feeding	10	20		30
4	Maintain occupational safety hazards at work place	Apply safe working practices at work place. TXT/3723/OC4	10	20		30
5	Workplace communication strategies	Demonstrate comprehensive effective workplace communication strategies. TXT/3723/OC5	10	20		30
6	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	-	-	60	60
7	Employability Skills	As per guided curriculum	30	-	-	30
TOTAL			90	120	60	270

SYLLABUS:**Module No. 1: Carding basics and Roles & responsibilities**

Outcome : Explain the process of Jute Carding and identify the roles & responsibility of card tenter

Theory Content:

- Objectives of Jute Carding.
- Process sequence of Jute Carding.
- Basic Jute Carding terms such as **Breaker card, Finisher card, Shell feed, Stripper, Carding angle, Tooth height etc.**
- Sequences of work in a Jute Carding machine.
- Roles and responsibility of the Jute Card Tenter.
- Procedure for documentation.
- Safety protocols.

Practical Content:

- Demonstrate Jute Carding operation.

- Draw of the schematic diagram of material flow in card.
- Execute the roles and responsibility of the Jute Card tenter.
- Prepare necessary operational tools of Carding machine.
- Check feed material to card.
- Meet production & quality requirements.
- Check the color coding of different quality of Jute sliver rolls & grade of raw jute.
- Check of machine breakdowns, mechanical fault of the Carding machine.
- Sliver faults identification and produce remedies.
- Ensure maximum efficiency and productivity of the Carding machine.
- Preparation of shift Handing over/taking over.

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook, Pen pencil.

Tools & Equipment needed : Jute Carding machine, Apron, head cap, nose mask, earplug, shoe, micrometer, tachometer, pressure gauge, scissors, Work method posters, pictures, videos. Pen, Pencil, Marker etc.

Module No. 2: Carding operation

Outcome: Demonstrate machine parts with functions and operate the carding machine

Theory Content:

- Description of different components of a Jute Card.
- Functions of the parts of Jute Card.
- Process flow of jute Carding.
- Various processing parameters of card and their settings.
- Process parameters effecting performance of Jute Card such as **card clothing, point density, cylinder dia, stripper dia, fibre transfer rate , carding angle, tooth height** etc.
- Settings of card components.
- Importance of sliver quality.
- Different material handling equipment and their use.

Practical Content:

- Identify different components of a Jute Card and their functions.
- Demonstrate functions of **delivery rollers, drawing rollers, stripper, worker, cylinder, doffer, shell feed etc.** of the Jute Carding machine.
- Operate Starting & controlling switches of individual drives of machine.
- Correct procedure of feeding on the feed table and checking of working condition of the conveyor.
- Maintain sliver regularity by removing some sliver during machine stoppages to keep the feed roller clean.
- Maintain correct moisture content of the feed material.
- Execute Doubling process as required and & maintain uniformity of the fleece to finally have a uniform carded sliver.

- Check for jams, fibre accumulation of machine parts and remove them.
- Check of carded rolls and its compactness.
- Store the carded rolls properly after batch completion.
- Collect wastes, fibre droppings etc time to time.
- Keep the machine well lubricated and cleaned.

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook, Pen pencil.

Tools & Equipment needed: Jute Carding machine, Card clothing stripping tools, Grinding tools, Apron, head cap, nose mask, earplug, shoe, micrometer, tachometer, pressure gauge, scissors, Work method posters, pictures, videos. Pen, Pencil, Marker etc.

Module No. 3: Sliver feeding & doffing

Outcome : Attend the card on sliver breakage and perform doffing/feeding

Theory Content:

- Significance of card sliver hank and linear density in the jute spinning process.
- Factors influencing card sliver characteristics
- Standard Operating Procedures (SOP) of feeding of sliver, doffing of sliver.
- Procedures for controlling the quality of feed material and wastage of Carding for jute yarns.
- Knowledge of sliver size, its uniformity and irregularity of the sliver
- Significance of doffing.

Practical Content:

- Open the cover of the doffer and clean it time to time ensuring proper delivery of jute sliver.
- Avoid sliver accumulation in delivery plate.
- Proper process of passing the sliver through the delivery plate and then pass it through the delivery zone to get condensed sliver.
- Check uniformity of the sliver & report the supervisor for any problems.
- Follow standard feeding procedure.
- Transfer the reusable sliver wastes to the first carding machine.
- Feed the breaker card sliver to the finisher card.
- Ensure proper sliver handling using iron hooks.

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook, Pen pencil.

Tools & Equipment needed: Jute Carding machine, Carded slivers, Sliver can, Apron, head cap, nose mask, earplug, shoe, micrometer, tachometer, pressure gauge, scissors, Work method posters, pictures, videos. Pen, Pencil, Marker etc.

Module No. 4: Maintain occupational safety hazards at work place

Outcome : Apply safe working practices at work place

Theory Content:

- Significance of routine cleaning activities of machine maintenance
- 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 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
- Identify electrical hazards (power supply and points, loose and naked cables and wires, equipment malfunctions, etc.)
- Apply electrical precautions like insulated clothing, adequate equipment insulation, use dry work area etc.
- Identify safety features and emergency stop locations
- Present proper method of rescue techniques applied during fire hazard and other accidental situation.

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook

Tools, Equipment and Other Requirements:

Protective Gloves, Head Caps, Safety Goggles, Safety Boots, Mouth Masks, coats and aprons; ear plugs or muffs; eye and facial protection; head-wear; lifting assistance;

Module No. 5: Workplace communication strategies

Outcome : Demonstrate a comprehensive effective workplace communication strategies

Theory Content:

- Explain purpose or common goals of each member in a group of willing to work toward. Members feel that they played a role in determining these goals and the methods used to achieve them.

- Describe the task between each members in group, but also with its own processes and operating procedures.
- Maintain Communication is clear and direct manner.
- Interpret machine performance data and metrics
- Explain key indicators of machine health and efficiency
- Establish clear reporting procedures for machine running and performance
- Generate machine performance reports and sharing them with the team
- Discuss supervision policy as a leader who can bring the group together and build an environment in which the team can work together effectively.

Practical Content:

Demonstrate the purpose or common goals of each member in a group of willing to work toward. Members feel that they played a role in determining these goals and the methods used to achieve them.

- Identify the task between each members in group, but also with its own processes and operating procedures. The group periodically evaluates its performance.
- Exhibit the accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required.
- Apply Communication is clear and direct manner.
- Apply good communication environmental practices in workplace.
- Simulate/role play of ethical dilemmas in the workplace
- Illustrate organizational policies and procedures

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook

Tools, Equipment and Other Requirements:

Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer, Food Safety Manual, communication tools, communication manual, On-task Communication, Instant Chats , Video Conferencing, Voice Calls, Audio Recording, Discussion Forums, Instant File Sharing, External Communication

Module No. 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 No. 7: : Employability Skills (30 Hrs)

Introduction to Employability Skills

Duration: 1 Hour

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 Hour

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: 1.5 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: 5 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: 1.5 Hours

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

Communication Skills

Duration: 2 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: 1 Hour

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: 2.5 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: 5 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: 3 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: 2 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: 4.5 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	Explain the process of Jute Carding and identify the roles & responsibility of card tenter	<p>After completion of this module students will be able to:</p> <ol style="list-style-type: none"> 1.1. Demonstrate the Principles of Jute Carding process. 1.2. Execute Process sequence of Jute Carding. 1.3. Explain terms such as Breaker card, Finisher card, Shell feed, Stripper, Carding angle, Tooth height etc. 1.4. Identify the roles and responsibility of a Jute Card Tenter. 1.5. Prepare necessary operational tools for Carding machine. 1.6. Check the feed material to card. 1.7. Meet production & quality requirements. 1.8. Check the color coding of different quality of Jute sliver rolls & grade of raw jute.

Module No.	Outcome	Assessment Criteria
		1.9. Check for machine breakdowns, mechanical fault of the Carding machine and produce remedies. 1.10. Identify sliver faults and produce remedies. 1.11. Ensure maximum efficiency and productivity of the Carding machine.
2	Demonstrate machine parts with functions and operate the carding machine	After completion of this module students will be able to: 2.1. Demonstrate different components of a Jute Carding machine. 2.2. Explain Functions of the parts of Jute Carding machine. 2.3. Execute Process flow of Jute Carding. 2.4. Adjust Settings of card components. 2.5. Control process parameters such as point density, fibre transfer rate , carding angle, tooth height etc. 2.6. Demonstrate functions of delivery rollers, drawing rollers, stripper, worker, cylinder, doffer, shell feed etc. 2.7. Start & control switches of individual drives of machine. 2.8. Follow correct procedure of feeding on the feed table and check the working condition of the conveyor. 2.9. Maintain sliver regularity by removing some sliver during machine stoppages to keep the feed roller clean. 2.10. Execute Doubling process as required and & maintain uniformity of the fleece to finally have a uniform carded sliver. 2.11. Check for jams, fibre accumulation of machine parts and remove them. 2.12. Store the carded rolls properly after batch completion. 2.13. Collect wastes, fibre droppings etc time to time. 2.14. Keep the machine well lubricated and cleaned.
3	Attend the card on sliver breakage and perform doffing/feeding	After completion of this module students will be able to: 3.1. Explain significance of card sliver hank and linear density in the jute spinning process. 3.2. Follow Standard Operating Procedures (SOP) of feeding of sliver, doffing of sliver. 3.3. Control the quality of feed material and wastage of Carding for jute yarns.

Module No.	Outcome	Assessment Criteria
		3.4. Open the cover of the doffer and clean it time to time ensuring proper delivery of jute sliver. 3.5. Avoid sliver accumulation in delivery plate. 3.6. Properly Pass the sliver through the delivery plate and then pass it through the delivery zone to get condensed sliver. 3.7. Check uniformity of the sliver & report the supervisor for any problems. 3.8. Follow standard feeding procedure. 3.9. Transfer the reusable sliver wastes to the first carding machine. 3.10. Feed the breaker card sliver to the finisher card. 3.11. Ensure proper sliver handling using iron hooks.
4	Apply safe working practices at work place	After completion of this module students will be able to: 4.1 Demonstrate of effective cleaning techniques 4.2 Execute machine specific cleaning procedures 4.3 Create a checklist for routine cleaning tasks 4.4 Demonstrate the use of protective clothing/equipment for the specific tasks and work conditions 4.5 Describe the importance of PPE kit 4.6 Demonstrate the correct use of safety gear. 4.7 Identify electrical hazards, including power supply issues, loose cables and equipment malfunctioning 4.8 Detect health hazards (such as untreated injuries and contagious illness/ zoonotic diseases). 4.9 Maintain Fire safety and prevention of fire hazards in workplace [fire extinguishers, fire Alarm, fire exits] 4.10 Ensure use of general health and safety equipment and materials in the workplace first aid equipment
5	Demonstrate a comprehensive effective workplace communication strategies	After completion of this module students will be able to: 5.1 Demonstrate the purpose of each team member and their involvement in determining goals 5.2 Identify tasks between team members and their own processes 5.3 Apply effective communication strategies in a practical context 5.4 Exhibit enterprise ethical standards in workplace interactions 5.5 Apply good communication environmental practices

Module No.	Outcome	Assessment Criteria
		in practical workplace 5.6 Simulate/Role play ethical dilemmas in the work place 5.7 Illustrate familiarity with relevant industry standards and regulations. 5.8 Explain the organizational policies and procedures
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)

Sl No	Items Name	Specification	Qty
1	Jute Card machine		1
2	Slivers		As required
3	Sliver can		As required
4	Micrometer		5
5	Tachometer		5
6	Brushes		As required
7	Pressure gauge		5
8	Card clothing stripping tools		As required
9	Grinding tools		As required
10	Air blowers		5
11	Apron		30
12	Head cap		30
13	Shoe		30
14	Hand gloves		30
15	Nose mask		30
16	Earplug		30
17	Meterage devices		5
18	Measuring scales, Inch Tape		5
19	Fire extinguishers		2
20	Fire Alarm		2
21	First aid equipment		2

Marks Distribution

Outcome	Outcome Code	Total Th marks	Total Pr marks	Total OJT marks
Explain the process of Jute Carding and identify the roles & responsibility of card tenter	TXT/3727/OC1	30	120	0
Demonstrate machine parts with functions and operate the carding machine	TXT/3727/OC2	40	170	0
Attend the card on sliver breakage and perform doffing/feeding	TXT/3727/OC3	30	120	0
Apply safe working practices at work place.	TXT/3723/OC4	20	120	0
Demonstrate comprehensive effective workplace communication strategies.	TXT/3723/OC5	30	120	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	TXT/3727/OC4	0	0	150
Employability Skills – 30 Hrs	DGT/VSQ/N0101	50	0	0