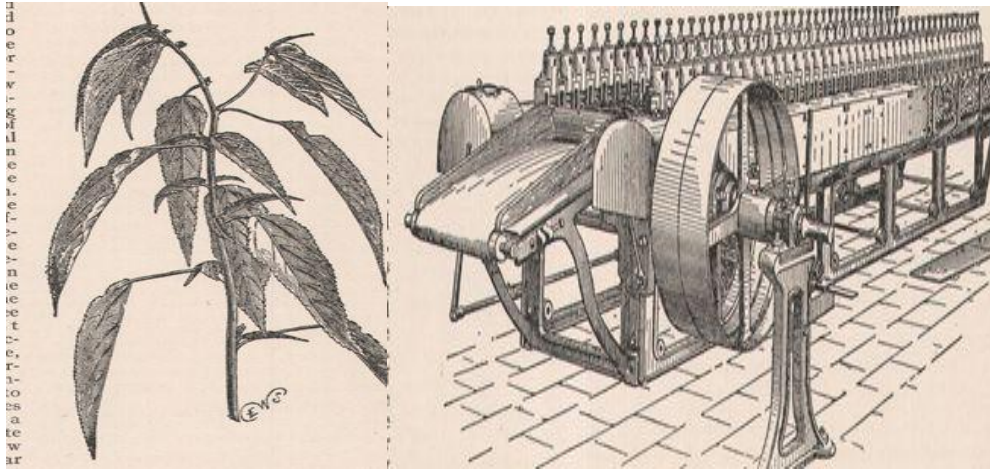


Course Curricula
Under
SKILL DEVELOPMENT INITIATIVE SCHEME (SDIS)
Based on
Modular Employable Skills (MES)
JUTE SECTOR



Government of India
Ministry of Labour & Employment
Directorate General of Employment & Training

List of members attended the Trade Committee Meeting for designing the course curriculum under **Skill Development Initiative Skill (SDIS)** based on **Modular Employable Skills (MES) on JUTE SECTOR**
Held on 16.01.2009

Sl. No.	Name and Designation	Organisation	
1.	Mr. S.D.Lahiri, Director	C.S.T.A.R.I., Kolkata	Chairman
2.	Mr. C. N. Chakraborty, Consultant	Indian Jute Mills Association	Member
3.	Mr. Subodh Ghosh, Chairman, Technical Development Division	Indian Jute Mills Association	Member
4.	Mr. L.R.Lodha, Executive Director	Hastings Jute Mill	Member
5.	Mr. B.N.Kochar, Technical Advisor	Hastings Jute Mill	Member
6.	Mr. A.Nivetia, Dy. General Manager (Planning & Development)	Hastings Jute Mill	Member
7.	Mr. P. Chatterjee, Joint President	Birla Jute Mill	Member
8.	Mr. S. K. Chandra, Director	Hukumchand Jute Mill	Member
9.	Mr. H.N.Ghosh, Technical Director	Ganges Mfg. Co. Ltd.	Member
10.	Mr. D.P.Shaha, Special Officer	Indian Jute Mills Association	Member
11.	Mr. Anil Kumar, Joint Director	C.S.T.A.R.I., Kolkata	Member
12.	Mr. M.C.Sharma, Joint Director	C.S.T.A.R.I., Kolkata	Member
13.	Mr. G.,Giri, Dy. Director	R.D.A.T., Kolkata	Member
14.	Mr. L.K.Muherjee, Dy. Director	C.S.T.A.R.I., Kolkata	Member
15.	Mr. R.N.Manna, Trg.Officer	C.S.T.A.R.I., Kolkata	Member
16.	Mr. S.B.Sardar, Trg.Officer	C.S.T.A.R.I., Kolkata	Member

**Course Curricula for Short Term Courses based on Modular
Employable Skills (MES) on Jute Sector**

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Skill Development based on Modular Employable Skills (MES)

Background

The need for giving emphasis on the jute sector Skill Development, especially for the educated unemployed youth (both for rural & urban) has been highlighted in various forums. Unfortunately, our country's current education system does not give any emphasis on development of skills on jute sector. As a result, most of the educated unemployed youths are found wanting in this area, which is becoming their Achilles heel.

As India is on the path of economic development and the share of service sector's contribution to the GDP of the country is increasing (53% of GDP) it is becoming imperative that Government of India along with other nodal agencies play an important role in providing employable skills, with special emphasis on Skills on jute sector.

Hence, need of the hour is some policy change at Apex level which will address the needs of the changing economy and look at providing mandatory Skills on jute sector. Training to all educated unemployed youths, with a view to have them gainfully employed. This shift in policy will ultimately benefit all the stake holders, namely the individuals, industry, Government and the economy by way of providing employment, increasing the output/productivity and ultimately resulting in a higher GDP for the nation.

- **Frame work for skill development based on 'Modular Employable Skills (MES)'**

Very few opportunities for skill development are available for the above referred groups (educated unemployed youth). Most of the existing skill development programmes are long term in nature. Poor and less educated persons cannot afford long term training programmes due to higher entry qualifications, opportunity cost, etc. Therefore, a new framework for Skills on jute sector development has been evolved by the DGET to address the employability issues.

The **key features of new framework for skill development** are:

- Demand driven short term training courses based on modular employable skills decided in consultation with Industries.
- Flexible delivery mechanism (part time, week ends, full time)
- Different levels of programmes (foundation level as well as skill upgradation) to meet demands of various target groups
- Central Government will facilitate and promote training while vocational training (VT) providers under the Govt. and Private Sector will provide training
- Optimum utilization of existing infrastructure to make training cost effective.
- Testing of skills of trainees by independent assessing bodies who would not be involved in conduct of the training programme, to ensure that it is done impartially.
- Testing & certification of prior learning (skills of persons acquired informally)

The Short Term courses would be based on "Modular Employable Skills (MES)".

The **concept for the MES** is:

- ✓ Identification of minimum skills set. Which is sufficient to get an employment in the Labour market.
- ✓ It allows skills upgradation, multiskilling, multi entry and exit, vertical mobility and life long learning opportunities in a flexible manner.
- ✓ It also allows recognition of prior learning (certification of skills acquired informally) effectively.
- ✓ The modules in a sector when grouped together could lead to a qualification equivalent to National Trade Certificate or higher.
- ✓ Courses could be available from level 1 to level 3 in different vocations depending upon the need of the employer organisations.
- ✓ MES would benefit different target groups like:

Workers seeking certification of their skills acquired informally

Workers seeking skill upgradation

Early school drop-outs and unemployed

Previously child Labour and their family

Age of participants

The minimum age limit for persons to take part in the scheme is 18 years but there is no upper age limit.

Curriculum Development Process

Following procedure is used for developing course curricula

- Identification of Employable Skills set in a sector based on division of work in the Labour market.
- Development of training modules corresponding to skills set identified so as to provide training for specific & fit for purpose
- Organization of modules in to a Course Matrix indicating vertical and horizontal mobility. The course matrix depicts pictorially relation among various modules, pre requisites for higher level modules and how one can progress from one level to another.
- Development of detailed curriculum and vetting by a trade committee and by the NCVT

(Close involvement of Employers Organizations, State Governments, experts, vocational training providers and other stakeholders is ensured at each stage).

Development of Core Competencies

Possession of proper attitudes is one of the most important attributes of a competent person. Without proper attitudes, the performance of a person gets adversely affected. Hence, systematic efforts will be made to develop attitudes during the training programme.

The trainees deal with men, materials and machines. They handle sophisticated tools and instruments. Positive attitudes have to be developed in the trainees by properly guiding them and setting up examples of good attitudes by demonstrated behaviors and by the environment provided during training.

Following competencies should also be developed during level-II and higher courses:

1. Ability for planning, organizing and coordinating
2. Creative thinking, problem solving and decision-making
3. Leadership
4. Ability to bear stress
5. Negotiation

Duration of the Programmes

Time taken to gain the qualification will vary according to the pathway taken and will be kept very flexible for persons with different backgrounds and experience. Duration has been prescribed in hours in the curriculum of individual module, which are based on the content and requirements of a MES Module. However, some persons may take more time than the prescribed time. They should be provided reasonable time to complete the course.

Pathways to acquire Qualification:

Access to the qualification could be through:

- ✧ An approved training Programme.

Methodology

The training methods to be used should be appropriate to the development of competencies. The focus of the programme is on “performing” and not on “Knowing”. Lecturing will be restricted to the minimum necessary and emphasis to be given for learning through active participation and involvement.

The training methods will be individual centered to make each person a competent one. Opportunities for individual work will be provided. The learning process will be continuously monitored and feedback will be provided on individual basis.

Demonstrations using different models, audio visual aids and equipment will be used intensively.

Instructional Media Packages

In order to maintain quality of training uniformly all over the country, instructional media packages (IMPs) will be developed by the National Instructional Media Institute (NIMI), Chennai.

Assessment

DGE&T will appoint assessing bodies to assess the competencies of the trained persons. The assessing body will be an independent agency, which will not be involved in conducting the training programme. This, in turn, will ensure quality of training and credibility of the scheme. Keeping in view, the target of providing training/testing of one million persons through out the country and to avoid monopoly, more than one assessing bodies will be appointed for a sector or an area.

Certificate

Successful persons will be awarded competency-based certificates issued by **National Council for Vocational Training (NCVT)**.

COURSE MATRIX

MODULE	I	II	III	IV	V	VI	VII
Level-I	Mazdoor	Jute Spreader/ Softner, (Feeder/ receiver/ pilers)	Breaker/ Teaser card feeder	Jute Drawing Operator	Sliver feeder/ Bobbin Shifter	Damping/ Calender/ Lapping Operator	Cutting Machine Operator
	VIII	IX	X	XI	XII	XIII	XIV
	Root Cutter, Heckler cum Selector	Breaker receiver & Finisher / Inter Card Feeder	Finisher card Receiver cum First Drawing Feeder	Spinner/ Twister	Pre Beamer	Beamer/ Dresser	Cop Winder
	XVI	XVII	XVIII	XIX			
	Weaver	Weaver – Modern Shuttleless Loom	Sewer	Press Operator			

Level –I

Module – I

Name – **Mazdoor**
Sector – Jute
NCO Code - JUT 101
Entry Qualification - 05th Class pass with age at least 18 yrs.
Age - 18 years
Terminal competency – On completion of the training one should be able to handle Jute Bale, shift Jute bundles and Trolley from one place to other safely.

Duration – 160 Hours (4 weeks.)

Sl. No.	Practical	Theory
	<ul style="list-style-type: none">• Safe handling of Jute Bale• Safe shifting of Jute bundle from one place to another.• Safe handling of Trolley etc,• DO's & Don'ts for Mazdoor in the mill.	<ul style="list-style-type: none">• Types of jute Fibres• Different Jute producing areas and colour tags for identification of jute.• Identification tags / codes of Jutes according to Quality / property.• Do's & Dont's for Mazdoor

Tools & Equipment

1. Trolley for Bale carrying
2. Hooks
3. Nose Mask
4. Trolley for keeping selected Jutes (Barrow)

LEVEL – I MODULE NO. – II

Name : **Root Cutter, Heckler cum Selector**
Sector : Jute
NCO Code : JUT 102
Entry Qualification : Minimum 5th Class Pass
Age : 18 years
Terminal Competency : On completion of the training one should be able to select / grade jute properly, cut root to desired length, hackle for proper opening and cleaning and make morah of proper size and twist and place either on barrow or bundle it.
Duration : 480 hours/12 weeks

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> - Proper Selection i.e. upgradation & downgradation with hand and eye method - Proper cutting of root portion - Proper hackling - Making proper morah size and arranging on the barrow gradewise - Carry the ropes to proper area for further processing - Open the knots of chhot and bundle them for subsequent processes. - Safety precautions and cleanliness. 	<ul style="list-style-type: none"> - Types of jute fibres - Different jute producing area and their quality - Important points on which jute selection is done - Jute selection operation – strength, root ratio, length, colour, lusture, density of fibres & defects of jute etc. - Do’s and Don’ts for jute selection - Identification tag/ colour code method for different quality of jutes. - Knowledge about safety and cleanliness.

TOOLS AND EQUIPMENTS

1. Chopper/Knife
2. Wooden block for chopping
3. Set of spikes for hackling
4. Trolley for Bale carrying
5. Nose mask
6. Hook
7. Trolley for keeping selected jutes (Barrow)

Level – I

Module – III

Name : **Jute spreader / Softener (feeder / receiver / Pilers)**
Sector : Jute
NCO Code : JUT 103
Entry Qualification: 05th Class Pass with age at least 18 years
Age : 18 Years
Terminal Competency : On completion of the training one should be able to properly feed jute morahs, receive jute by half twisting, knowledge of application of proper quantity of emulsion, properly handle the m/c and should perform basic maintenance of machine.

Duration : 160 hours (4 weeks)

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> - Proper feeding practice of jute morahs on feed table - Application of emulsion in softener/spreader machine - Proper receiving practice by half twisting and morahs at receiving end of softener. - Care and basic maintenance of spreader/softener machine - Machine operation. - Safety and Cleanliness aspects - Practice Machine operation - Starting and Stopping of machine 	<ul style="list-style-type: none"> - Necessity of jute softening - Important instructions to be followed at the time of working for spreader / softener machine - Safety precautions to be observed while operating spreader/softener machine - Emulsion and its purpose, - Important points during application of emulsion - Piling – its purpose and duration - Do's and Don'ts of spreader/softener operation and jute piling - Working procedure of spreader/softener m/c - Basic maintenance of spreader/ softener machine.

TOOLS & EQUIPMENT

- 1 Spreader/softener machine
- 2 Hammer
- 3 Spanner set
- 4 Screw driver
- 5 Nose mask
- 6 Oil can
7. Grease gun.

Level – I

Module – IV

Name – **Breaker / Teaser card feeder**
 Sector – Jute
 NCO Code – JUT 104
 Entry Qualification – 05th class pass with knowledge of Softner /Spreader Feeder/receiver pilers
 Age – At least 18 yrs.
 Terminal competency – On completion of the training one should be able to work on Breaker /Teaser card m/c as feeder.

Duration- 160 hours (4 weeks)

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> • Maturity of piling • Duties & responsibilities of Breaker/Teaser card Feeder • Proper feeding practice at feeding side of breaker /Teaser card. • Reasons of coming out bad slivers from breaker/Teaser card. • Picking of carding m/c at regular intervals. • Safety and cleanliness to be observed by Breaker/Teaser card feeder. • Care and maintenance of Breaker/Teaser card. 	<ul style="list-style-type: none"> • Introduction of different carding m/c - Breaker card, Teaser card – types, purpose and uses. • What is draft? • Safety arrangement of carding m/c. • What is tow and How it should be. • Basic care and maintenance of different carding m/c. - Do's and Don'ts of Breaker/Teaser card Feeder

Tools & equipment

1.	Breaker card m/c.
2.	Teaser card m/c.
3.	Hammer
4.	Spanner set.
5.	Screw Driver
6.	Nose Musk
7.	Oil can
8.	Grease Gun

Level – I Module – V

Name : **Breaker Receiver & Finisher / Inter Card Feeder**
 Sector : Jute
 NCO Code : JUT 105

Entry Qualification : 05th Class Pass
 Age : at least 18 years
 Terminal Competency : On completion of the training one should be able to ,
 properly work on different types of carding machines
 Duration : 320 hours (8 weeks)

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> - Proper receiving practice and work on receiving side of breaker card - Duties of finisher card operator at feeding side, maintain the quality of slivers - Reasons of coming out bad slivers from breaker / finisher card and its remedies. - Picking of carding machine at regular intervals. - No roll missing at feed as per batch - Reason behind production of bad quality slivers and its remedies - Safety & cleanliness points to be observed by feeder /carding machine - Basic maintenance and care to be taken - Correct Roll mixing as per batch fixed. 	<ul style="list-style-type: none"> - Introduction of carding machine - Breaker card, inter card, finisher card – purpose and uses. - What is draft. - Safety arrangement of carding machine - Types of card and their uses - What is tow and how it should be prepared. - Basic care and maintenance of different carding machine - Working principle of different carding machines.

Tools & Equipments

1. Breaker Card machine
2. Inter Card machine
3. Finisher Card machine
4. Teaser Card machine
5. Hammer
6. Spanner set
7. Screw driver
8. Nose mask
9. Oil can
10. Grease gun.

Level – I

Module – VI

Name : **Finisher Card Receiver cum First Drawing Feeder**
 Sector : **Jute**

NCO Code : JUT 106
 Entry Qualification : 05th Class Pass
 Age : at least 18 years
 Terminal Competency : On completion of the training one should be able to operate properly as finisher card receiver & 1st drawing feeder.

Duration : 320 hours (8 weeks)

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> -Duties & responsibility of finisher, card receiver. - Working principle of 1st drawing frame as feeder, duties & responsibilities. - Proper joining practice of slivers. - General care and maintenance to be taken for different jute drawing frames. 	<ul style="list-style-type: none"> -Purpose of drawings -Different types of finisher cards & drawing frames and their descriptions. -Duties and responsibilities of finisher cards & drawing frame operator. - Different reasons of sliver irregularity and wastages at different points including roll former. -Safety points to be observed during operation of finisher card and drawing frames. -Basic care and maintenance of different jute drawing frames and finisher cards. <ul style="list-style-type: none"> - Do's and don't of first drawing feeder & Finisher Card receiver. - Knowledge of effects of different moisture regains percentages.

Tools & Equipments

1. Different types of drawing machine.
2. Different Carding M/cs
3. Hammer
4. Spanner set
5. Screw driver

Level – I

Module – VII

Name – **Jute Drawing Operator**
 Sector – Jute
 NCO Code – JUT 107
 Entry Qualification – Minimum 05th pass

Age – At least 18 yrs age.
 Terminal competency – On completion of the training one should be able to work as feeder & receiver of drawing machine

Duration - 160 hours (4 weeks)

Practical	Theory
<ul style="list-style-type: none"> • Duties and responsibilities of drawing feeder & receiver. • working principle of Jute drawing frames. • proper joining (piecing) practice of slivers. • Basic care and maintenance to be taken for different jute drawing machines. • Do's and Don'ts of drawing operator 	<ul style="list-style-type: none"> -Role of drawing operator -Different types of jute drawing frames and their descriptions. -Duties and responsibilities of drawing operator. -Safety point to be observed during operation of drawing frames. -Working mechanisms of different types of jute drawing frames. -Basic care and maintenance of different jute drawing frames

Tools & Equipments

1. Different jute drawing frames.
2. Hammer
3. Spanner set
4. Screw driver
5. Oil can
6. Grease gun
7. Nose Mask

LEVEL – I **Module No. – VIII**

Name : **Spinner/Twister**
 Sector : Jute
 NCO Code : JUT 108
 Entry Qualification : 05th Class Pass
 Age : 18 years

Terminal Competency : On completion of the training one should be able to operate different spinning & twisting frames efficiently.
 Duration : 480 hours (12 weeks)

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> - Introduction and familiarization with different types of jute spinning and twisting frames. - Practice on yarns piecing. - Doffing practice. - Working function of fine and coarse jute spinning/twisting machine. - Basic care and maintenance of spinning/twisting frames. - Achieve proficiency in piecing up yarns and doffing. - Effort to keep Sliver wastage on lower side. 	<ul style="list-style-type: none"> -Description and purpose of spinning /twisting - Different types of jute spinning/twisting and their descriptions. - Doffing systems. -Technical specification of spinning frames and Twisting frames. -Do's and don'ts of spinning/twisting machine operation. - Safety devices. - Measures to reduce wastages and achieve higher production & efficiency.

Tools & Equipments

- 1 Different spinning frames
- 2 Different type of twisting frames.
- 3 Hammer
- 4 Spanner set
- 5 Screw driver
- 6 Oil can
- 7 Grease gun

LEVEL – I MODULE NO. – IX

Name – **Sliver Feeder/Bobbin Shifter**
 Sector – Jute
 NCO Code – JUT 109
 Entry Qualification – 05th pass
 Age – At least 18 yrs .
 Terminal competency – On completion of the training one should be able to work as Sliver feeder of spinning frames and as bobbin shifter of

spinning frames as the case may be.

Duration - 160 hours (4 weeks)

Practical	Theory
<ul style="list-style-type: none">• Introduction and familiarization with different types of jute spinning frames.• Doffing practice.• Slivers feeding practice.• Bobbin shifting practice.• Identification practice of damaged Bobbins.• Basic care and maintenance of Trolley, Bobbins, Sliver Cans.• Identification of different quality of yarn.	<ul style="list-style-type: none">• Description and purpose of spinning.• Doffing systems.• Different type of slivers & bobbins sizes.• Do's and don't of sliver feeding & bobbin feeding.

Tools & Equipments

- 1 Sliver Carts & Bobbinn Trollys
- 2 Spanner set
- 3 Screw driver
- 4 Oil can
- 5 Grease gun
- 6 Nose Mask

LEVEL – I MODULE NO. – X

Name – **Spool winder**
Sector – Jute
NCO Code – JUT 110
Entry Qualification – 05th class pass
Age – At least 18 yrs .
Terminal competency – After completion of the training one should be able to produce good quality Jute yarn spools efficiently with the knowledge of proper knotting, wastage reduction and basic care & maintenance of the different spool winding machines.

Duration - 320 hours (8 weeks)

Practical	Theory
<ul style="list-style-type: none"> • Familiarization with different types of spool winding m/c and with their parts. • Working mechanism of conventional Jute spool winding m/c. • Proper knotting practice in spool winding m/c. • Remedial steps to be taken to avoid production of defective spools. • Practice of remedial steps to control wastage. • Practice of basic care and maintenance in spool winding m/c. • Identification of quality of yarn. <ul style="list-style-type: none"> • Practice of Do's & Don'ts of spool winding operators. • Practice of good house keeping. • Identification practice of damaged Bobbins. • Identification practice by colour marking on spools for different qualities.. 	<ul style="list-style-type: none"> • Jute yarn winding – Purpose, types of spool winding. • Practices of good winding. • Purpose of spool winding, Importance, effects of faulty spool winding. • Different types of Jute spool winding m/c. and general information. Different parts and their functions. • Operational mechanism of different spool winding m/c. • Duties and responsibilities of warp winding m/c operator. • Different defects of spools and their remedies. • Safety care and maintenance to be observed in spool winding m/c. • Wastage of thread and its control. • Do's & Don'ts of spool winding operators • Knowledge of Operational Productivity.

Tools & Equipment

1.	Different types of spool winding m/cs
2.	Precision winding m/c
3.	Transportation Trolley for spools
4.	Transportation trolley for spinning bobbins.
5.	Hammer
6.	Screw Driver
7.	Spanner set
8.	Oil can
9.	Grease Gun
10.	Nose mask

LEVEL – I MODULE NO. – XI

Name	– Cop winder
Sector	– Jute
NCO Code	–JUT 111
Entry Qualification	– 05 th class pass and having passed the course of spool winder of Jute Sector under MBS.
Age	– 18 years

Terminal competency – After completion of the training one should be able to produce good quality Jute Cops efficiently with the knowledge of proper knotting, wastage reduction and basic care & maintenance of Cops winding machines.

Duration - 320 hours (8 weeks)

Practical	Theory
<ul style="list-style-type: none"> • Familiarization with different types of Cop winding m/c. • Working mechanism of different Cop winding m/c. • Practice of different important settings of cop winding. • Proper knotting practice in cop winding m/c. • Remedial steps to be taken to avoid production of defective cops. • Practice of remedial steps to control wastage. • Practice of basic care and maintenance in cop winding m/c. • Practice of good house keeping. • Marking of cop bundles according to quality. 	<ul style="list-style-type: none"> • Cop winding – Purpose, types of cop winding. • Purpose of cops winding, importance, effects of bad cop winding. • Different types of cop winding m/c. and general information. Different parts and their functions. • Measurement of cop dimension <ul style="list-style-type: none"> • Different important settings of cop winding m/c. • Duties and responsibilities of cop winding m/c operator. • Marking system of cops according to qualities. • Different defects in cops and their remedies. • Safety care and maintenance to be observed in cop winding m/c. • Wastage of thread and its control. • Do's & Don'ts of cop winding operator.

Tools & Equipment

1.	Different type of cop winding m/c.
2.	Transportation trolley for cops.
3.	Hammer
4.	Screw Driver
5.	Spanner set
6.	Oil can
7.	Grease Gun
8.	Nose mask

LEVEL – 1 MODULE NO. – XII

Name : **Pre-Beamer**
 Sector : Jute
 NCO Code : JUT 112
 Entry Qualification : 5th Class Pass
 Age : 18 years
 Terminal Competency : On completion of the training one should be able to produce good quality pre-beams efficiently with knowledge of proper knotting, waste reduction and basic care and maintenance of pre-beam machine.
 Duration : 320 hours/8 weeks

Sl. No.	Practical	Theory
	- Familiarization with parts and their function of pre-beam machine.	-Pre-beaming it's purpose & importance, -Introduction of pre-beaming machine and their

	<ul style="list-style-type: none"> - Familiarization with working procedures of pre-beam machine. - Setting procedure of warp thread in pre-beam machine. - Proper denting procedure of warp thread on pre-beam. - Observation of regular linear motion of winding on pre-beam. - Proper setting of empty beam on the machine. - Practice of proper knotting of thread. - Observation of safety point and arrangement on pre-beaming machine. - Putting identification tags on pre-beam for quality. - Practice & remedial steps to control wastages. - Ensuring proper function of stop motions - Basic care and maintenance of pre-beaming machine. - Collect empty spool centres and keep them in proper place. 	<p>working procedures, different parts and their functions.</p> <ul style="list-style-type: none"> - laid length. -difference between pre-beam & normal beam. -Safety arrangement in pre-beaming machine. -Concepts of producing good pre-beams and it's importance. Steps to be taken to produce good pre-beams. - Making of pre-beam according to different qualities. - Functions of stop motions -Steps to be taken to reduce waste. -Duties and responsibilities of pre-beaming operator/helper. -Do's and don't of pre-beaming operator/helper.
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TOOLS AND EQUIPMENTS

1. Pre-beaming machine
2. Transportation trolley for spools.
3. Transportation trolley for beams.
4. Empty Beams
5. Hammer
6. Screw driver.
7. Spanner set.
8. Oil can
9. Grease gun.
10. Nose Masks.

**LEVEL – 1
MODULE NO. – XIII**

Name : **Beamer / Dresser**
Sector : Jute
NCO Code : JUT 113
Entry Qualification : 5th Class Pass
Age : 18 years
Terminal Competency : On completion of the training one should be able to produce good quality beam efficiently with knowledge of proper knotting, wastage reduction and basic care and maintenance of beaming machine.

Duration : 320 hours (8 weeks)

Sl. No.	Practical	Theory
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	<ul style="list-style-type: none"> - Knowledge of / Assessment of sow mixture in proper ratio of ingredient - Familiarization with parts and their function of sizing/beaming machine. - Familiarization with working procedures of sizing/beaming machine. - Setting procedure of warp thread in sizing/beaming machine. - Proper denting procedure of warp thread on beam. - Proper setting of pressure roller. - Winding of dried warp thread on empty beam with proper yarn tension. - Observation of regular linear motion of winding on beam. - Proper setting of empty beam on the machine. - Use of friction clutch to control the speed of beam. - Marking laid length. - Practice of proper knotting of thread. - Observation of safety point and arrangement on sizing/beaming machine. - Putting identification slips on beam for quality. - Use of lease reeds. - Monitoring steam pressure. - Practice on remedial steps to control wastages. - Basic care and maintenance of sizing / beaming machine. 	<ul style="list-style-type: none"> -Beaming- definition, purpose, importance, and quality of size mixture. -Types of clothes- hessian, sacking. -Introduction of sizing /beaming machine and their working procedures, different parts and their functions. - laid length. -difference between sacking beams and hessian beams. -Safety arrangement in sizing/ beaming machine. -Concepts of producing good beams and properties of good beams. Step to be taken to produce good beams. -Step to be taken to reduce wastage. -Duties and responsibilities of beaming operator. -Do's and Don'ts of beaming operator. - making of beam according to different qualities.
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Tools & Equipments

11. Sizing/beaming machine
12. Transportation trolley for spools.
13. Transportation trolley for beams.
14. Hammer
15. Screw driver.
16. Spanner set.
17. Oil can
18. Grease gun.

Level – I

Module – XIV

Name	– Weaver
Sector	– Jute
NCO Code	–JUT 114
Entry Qualification	– 05 th class pass
Age	– 18 yrs
Terminal competency	– on completion of the training one should be able to produce good quality Jute Cloth efficiently with knowledge of weavers knot, wastage reduction and basic care & maintenance of weaving machines.

Duration - 480 hours (12 weeks)

Practical	Theory
<ul style="list-style-type: none"> • Familiarization with different motion of looms, shedding, picking, Beating, Let off, Take up, etc. • Setting of shotting pinion. • Familiarization with different Looms, their parts & Functions. • Point to remember by weaver for good quality production on weaving m/c. • Practice of remedial steps to control wastage. • Practice of proper weavers knot. • Point to remember by weaver for better quality of cloth. • Basic care and maintenance of different types of Looms and their parts. • Checking of tuning of loom and remedial steps to be taken for different problem in Loom operation. • Practice of wastage reduction. 	<ul style="list-style-type: none"> • Weaving – Definition, purpose, Importance. • Concept of Jute cloth – cloth width, ends & picks per dm • Loom – Different motion: shedding, picking, Beating, Let off, Take up. • Use of shotting change pinion. • Description of different Looms – Jute Hessian Loom, Jute Sacking Loom, their parts and functions. • Duties and responsibility of weaver • Different reasons effecting production on Loom • Different reasons for low speed of looms. • Reasons for knock off of loom. • Different faults their reasons and remedies of automatic cop loading system. • Knowledge of loom tuning according to crank cycle of jute looms. • Do's and Don'ts of weaver. • Defects of Jute cloth, their reasons and remedies.

TOOLS AND EQUIPMENTS

1. Jute Hessian Loom
2. Jute Sacking Loom.
3. Hammer.
4. Screw Driver.
5. Spanner set.
6. Oil can
7. Grease Gun

Level – I

Module – XV

Name – **Weaver – Modern Shuttleless Looms**
Sector – Jute
NCO Code – JUT 115
Entry Qualification – Minimum 05th class pass
Age – 18 yrs
Terminal competency – on completion of the training one should be able to handle modern shuttleless looms and produce good quality Jute Cloth efficiently with proper use of weavers' knot, knowledge of wastage reduction and basic care & maintenance of modern looms.

Duration - 480 hours /12 weeks

Practical	Theory
<ul style="list-style-type: none"> • Familiarization with different motion of looms, shedding, picking, Beating, Let off Take up, 	<ul style="list-style-type: none"> • Weaving – Types of weave and its purpose, importance etc.

<p>etc.</p> <ul style="list-style-type: none"> • Setting of shottig pinion. • Familiarization with different types of modern looms, their parts & functions. • To learn good practices for producing good quality fabric on loom. • Remedial steps to control waste. • To learn proper weaver's knotting. • Basic care and maintenance of different types of modern looms and their parts. • Knowledge of tuning of loom and checking proper functioning of pick-up, let off and take-up motions. • To learn reasons for loom stoppage and production of poor quality of fabric on loom and its remedial measures. • Safety practices 	<ul style="list-style-type: none"> • Concept of Jute cloth – cloth width, ends & picks per dm • Loom – Different motion, shedding, picking, Beating, Let off, Take up. • Difference between modern looms and conventional shuttle looms • Description of different types of modern looms – their parts and functions. • Duties and responsibilities of weaver • Aspects effecting production on Loom • Causes effecting speed of looms. • Reasons for knock off of loom. • Different faults their reasons and remedies • Do's and Don'ts for weaver. • Defects of Jute cloth, their reasons and remedies and see samples of each variety as far as possible.
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TOOLS AND EQUIPMENTS

8. Modern shuttleless loom
9. Full beam
10. Pocket knife
11. Hammer.
12. Screw Driver.
13. Spanner set.
14. Oil can
15. Grease Gun

Level – I

Module – XVI

Name – **Damping /Calendar / Lapping Operator**
Sector – Jute
NCO Code – JUT 116
Entry Qualification – 05th class pass
Age – At least 18 yrs
Terminal competency – on completion of the training one should be able to work on damping/calender / Lapping m/cs efficiently with knowledge of Damping machines, calendaring and Lapping machines.

Duration - 160 hours (4 weeks)

Practical	Theory
<ul style="list-style-type: none"> • Introduction and familiarization with different Damping m/c's – their parts & function and working procedures of Damping m/cs. • Practice of working on damping m/c. 	<ul style="list-style-type: none"> • Introduction, purpose of finishing. • Important factors of Jute finishing operations. • Steps of operations in Jute finishing.

<ul style="list-style-type: none"> • Introduction Familiarization with calendar machine - their parts & function and working procedures of calendar m/c's. • Practice of working on calendar m/c • Do's and Don'ts of calendar operator. • Introduction and Familiarization with lapping m/c – its working procedure. • Practice of working procedure on Lapping m/c. • Do's and Don'ts of Lapping machine operator. • Basic maintenance practice of Damping m/c, calendaring m/c and Lapping m/c. • Observation of safety procedures • Basic Maintenance of different measuring instruments of lapping machine. • Safety and cleanliness aspects 	<ul style="list-style-type: none"> • Purpose of damping. • Different Damping m/c and their description. • Do's and Don'ts of Damping m/c operator. • What is calendaring process, its purpose • Detection of different faults found on ex – Loom Jute cloth at Calender. • Jute calendar machine – Description parts and their function. • Different calendar process. • Lapping – purpose, Description of lapping machine. • Fault and remedies on Damping m/c, calendar m/c and Lapping m/c. • Different measuring Instruments • Knowledge of Safety devices and maintenance of cleanliness.
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TOOLS AND EQUIPMENTS

1. Different types of Damping m/c.
2. Different types of Calander m/c.
3. Lapping m/c.
4. Hammer.
5. Screw Driver.
6. Spanner set.
7. Oil can
8. Grease Gun

LEVEL – I Module – XVII

Name	– Cutting Machine Operator
Sector	– Jute
NCO Code	– JUT 117
Entry Qualification	– 05 th class pass
Age	– At least 18 yrs
Terminal competency	– on completion of the training one should be able operate different types of cutting machine, setting of machine for cutting different cloth length according to measurement and can undertake basic maintenance of different types of cutting machines.
Duration	- 160 hours (4 weeks)

Practical	Theory
<ul style="list-style-type: none"> • Hand cutting practice of jute cloth 	<ul style="list-style-type: none"> • Cutting machine- purpose.

<p>according to measurement.</p> <ul style="list-style-type: none"> • Introduction and familiarization with different types of jute cloth cutting machine, their parts and functions. • Setting practice of machine for cloth cutting according to measurement. • Basic maintenance practice of different jute cutting machines. • Cutting practice of jute cloth and checking of measurement. • Safety measures and cleanliness. 	<ul style="list-style-type: none"> • Cutting methods – hands and machine. • Knowledge of different types of cutting machine. • Do's and don't of cutting machine operator. • Different faults on jute cutting machine and their remedies. • Knowledge of Safety devices on machine.
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TOOLS AND EQUIPMENTS

1. Different cutting machine
2. Hammer.
3. Screw Driver.
4. Spanner set.
5. Oil can
6. Grease Gun

LEVEL – I MODULE NO. – XVIII

Name	: Sewer
Sector	: Jute
NCO Code	: JUT 118
Entry Qualification	: 05 th Class Pass
Age	: 18 years.
Terminal Competency	: On completion of the training one should be able to stitch jute bags efficiently by operating different sewing machine.
Duration	: 320 hours (8 weeks)

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> - Introduction, description and familiarization different sewing methods and related machine. - Operating practice of different types of sewing machine. - Introduction and familiarization with different types of stitches and their methods and uses. - Practice of different types of stitching. - Introduction and familiarization with different types of seams and 	<ul style="list-style-type: none"> -Sack sewing- purpose. Different types of sewing – <ol style="list-style-type: none"> 1. hemming 2. herackle. 3. safety - Different types of seams. - Depth/bite of stitches, Nos. of stitches per dm - Missing stitch - Different faults in stitching of jute bags and

	<p>their stitching methods.</p> <ul style="list-style-type: none"> - Practice of different types of seams stitching. - Observation of basic fault in stitching jute bags and taking remedial steps. - Practice of basic maintenance of different types of sewing machines. - Safety and care to be observed in operating different types of sewing machine. - Achieve efficiency in production at desired level. 	<p>their remedies.</p> <ul style="list-style-type: none"> - Do's and don'ts of jute stitching machine operator.
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Tools & Equipments

1. Hemming stitching machine
2. Herackle stitching machine
3. Safety stitching machine
4. Hammer
5. Screw driver
6. Oil can
7. Grease gun

LEVEL – I
MODULE NO. – XIX

Name : **Press Operator**
Sector : Jute
NCO Code : JUT 119
Entry Qualification : Minimum 5th Class Pass with age at least 18 years
Terminal Competency : On completion of the training one should be able to operate baling press and pack cloth & bags in bale form in proper shape & size effectively and should have knowledge of basic maintenance of press.
Duration : 320 hours/8 weeks

Sl. No.	Practical	Theory
	<ul style="list-style-type: none"> - Familiarization with baling press and it's various parts, - Familiarization with operation procedures of baling press, - Process of setting press bars for required no. of hoops, - Whole procedure of laying of pack-sheet and arranging cloth/ bag bundles, compressing, placing hoops, locking each hoop with buckle and pins, releasing pressure, stitching pack-sheet and safe removal of bales from press to floor for onward handling by others. 	<ul style="list-style-type: none"> -Baling Press - it's purpose & importance, -Introduction of baling press machine and it's working procedure, different parts and their functions, - No. of Hoops required for different size of bales, -Importance of good bale with proper size, shape and compactness of bales, -Safety arrangements in baling press machine, - Selection of correct hoop length, - Broad idea of water and oil pumps used for press, -Duties and responsibilities of baling press operator, -do's and don't of press operator.

	<ul style="list-style-type: none">- Monitoring of pressure within safety limit,- Basic care and maintenance of baling press,- Knowledge of safety measures.	
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TOOLS AND EQUIPMENTS

- 1 Baling Press
- 2 trolley for cloth/ bags
- 3 trolley for bales
- 4 Hammer
- 5 Screw driver
- 6 Spanner set
- 7 Oil can
- 8 Grease gun

Module-XX

Name: Electrical Maintenance

Sector: Jute Sector

Code No: JUT 120

Entry Qualification: 8th passed

Duration: 300 hrs

Terminal Competency:

After completion of training the trainee will be able to:-

1. Maintain and lay industrial wiring.
2. Erection and Maintenance of Distribution boards/Bus bar, capacitor, main switch, starter and motors etc.
3. Preventive maintenance and trouble shooting.

Course contents:

Sl. No.	Practical	Theory
1.	Demonstration on personal protection. Necessity of safety & remedies. Demonstration of shock prevention/remedies. Demonstration of fire extinguisher in electrical fire.	Knowledge of safety precautions for self & equipments. Causes and prevention of shock and first aid treatment of electrocuted person. Use of fire extinguisher.
2.	Identification, usage and maintenance of hand tools & Measuring instruments.	Knowledge of tools required for-marking, punching, cutting, drilling, filing, stripping, crimping, socketing and fixing glands & screws etc. Knowledge of Measuring tools, wire gauges etc. Classification / identification of the electrical equipments cables, wires and electrical accessories used in industry.
3.	Practice on basic symbols used in electrical work, exercise involving different operation on wood, PVC sheets, pipes and plywood. Practice on wiring diagram.	Different types of wires & conductors, Load carrying capacity. Knowledge of Wiring diagram. Knowledge of difference electrical wiring-residential, industrial and O.H. Lines. Types of conductors and insulators and their applications.
4.	Drilling holes on walls, PVC sheets by Portable drill machines. Making boards for switches.	Basic electrical concepts. AC, DC, single phase, 3 phase supply, voltage current, power and energy and its relationship. Ohm's law. Knowledge of Measurement of current, voltage, power using ammeter, voltmeter, wattmeter, energy meter,

		megger, power factor meter and frequency meter etc
5.	Practice and working on cable lay out and different circuits Marking the position of different accessories and its connection. Practice in connection of different electrical fittings.	Knowledge and selection of series and parallel circuit, Uses of fuses, MCB, MCCB, ACB and OCBs.
6.	Wiring practices of different types of wiring and earthing and earth testing	Types and importance of earthing
7.	Checking & testing of Electrical Wiring as per drawing. Fault finding and preventive maintenance, trouble shooting	Types of common faults and method of fault findings and remedies thereof. Knowledge of Quality assurance required in Electrical works. Energy saving concept
8.	Connection and fixing of star- delta and DOL starter in a 3 phase motor. Auto star delta starter. Starting method of slip ring induction motor. Fixing of capacitor and single phase preventor.	Working principle of DOL, Star-Delta starter and auto star-delta starter. Procedure of speed control. Advantages of using DOL and star delta starter. Methods of speed control. Introduction to drive Knowledge of different types of motors & their Construction. Working principle of Single & 3 phase induction motor. Difference between squirrel cage and slip ring induction motors.
9.	Practice on control circuits of motors: - using on off switch locally and remote control. Demonstration on controlling of Speed and their measurements. Forwarding & reversing control of motors.	Knowledge of circuit diagram of motors & transformer. Knowledge on controlling of speed and their measurements.
10.	Tracing primary and secondary winding of transformer practice on parallel operation of transformer. Polarity test. Connection of Step-down transformer, 3 phase transformer in a given load. Testing dielectric strength and acidity test of transformer oil	Basic principle of transformer, types of transformers, protective device of transformer, identification of its different parts. theory of dielectric strength and acidity test of transformer oil.

11.	Practice on pipe, coil and plate earthing.	Necessity and test of earthing.
12.	Rewinding, Checking & testing of motors.	Knowledge of motor repairing including rewinding method.
13.	Practice on Glanding of cables, lying of cables and different type of cable jointing.	Knowledge of Different types of cables, its uses and identification. As per IE rules choice of cable. Selection of cables as per given parameters.
14.	Practice on cable trays bending 45° and 90°	Knowledge of Different types of trays .
15.	Practice on identification of different parts of lead acid battery. Checking of its electrolyte. Charging practice of lead acid battery and its preventive maintenance. Testing of lead acid battery	Knowledge of Parts of lead acid battery. Knowledge of maintenance of lead acid battery.
16.	Practice on starting method of DG Sets. Change of lubricant, coolant.	Basic knowledge of operating of DG sets
17.	Practice on air compressor and hand blower for cleaning.	Knowledge of principle of working of air compressor and hand blower
18.	General work habits as per IE rules.	Knowledge of IE rules & regulation
19.	Importance of maintenance and role in reducing machine down time for electrical reasons in working environments.	

Lists of Tools & Equipments for a batch of 16 trainees

Sl. No.	Tools & Equipments	Quantity
1.	Electrical tool kit	16 nos
2.	Hammers	16 nos.
3.	Portable drill machine and drill bits.	4 nos
4.	Multimeter	4 nos
5.	Megger	4 nos
6.	Line tester	4 nos
7.	Hack saw	16 nos
8.	Combination pliers	8 nos
9.	Nose pliers	8 nos
10.	Wire stripper	4 nos
11.	Wire gauge	4 nos
12.	Measuring tape	8 nos
13.	Screw drivers	16 nos

14.	Electrician knife	16 nos
15.	Try square	8 nos
16.	Centre punches	16 nos
17.	Switches, 2 way switches, sockets, regulators	As required
18.	Ceiling roses, holders, plug tops	As required
19.	Fans, bulbs, fluorescent tubes	As required
20.	Chokes and starters	As required
21.	MCB, ICDP	As required
22.	Kit kat fuses, PVC board (Diff. sizes)	As required
23.	Hand gloves	16 nos
24.	Cables, G.I. wires, pvc pipes and sheets, pvc casing capping	As required
25.	Junction boxes	As required
26.	Main switches	As required
27.	Earth tester	4 nos
28.	Multimeter, Energy meter, Volt meter, Ammeter, wattmeter	4 nos. each
29.	Hammers(Small)	16 nos
30.	CT & PT	2 nos. each
31.	Tong tester	4 nos
32.	Star-delta starter, DOL starter, Slip ring motor starter	2 nos. each
33.	Motors (Squirrel cage, slip ring induction motor)	2 nos. each
34.	Single phase & 3 phase transformer	1 nos. each
35.	Single phase motor	1 no
36.	3 phase power starter with auxiliary contact	1 no
37.	Tacho meter	1 no
38.	Power factor meter	1 no
39.	Cable trays (ladder & punched)	2 no each
40.	Inverter	1 no
41.	Lead acid battery	1 no
42.	Charger	1 no
43.	DG Set	1 no
44.	Cables different types	As required
45.	Thyrister	4 nos
46.	Triac	4 nos
47.	Soldering flux	As required
48.	Blow lamp	4 nos
49.	Lug	16 nos
50.	Crimping machine	2 nos

List of members attended the Trade Committee Meeting

SL NO	Members with Designation S/Sri	Organization	Remarks
1	S.D.Lahiri, Director	CSTARI,Kolkata	Chairman
2	Gouri Sankar Sarangi, Additional Chief Engineer	WBSEDCL, Kolkata	Member
3	Palas Gain, Electrical Engineer	J.J.Electric Aid,Kolkata	Member
4	Apurba Mondal, Electrical Engineer	Directorate of Electricity, Govt of West-Bengal	Member
5	Pralay Ray Chaudhury, Electrical Engineer	Ganges Jute Mills, Kolkata	Member
6	Harisankar Dutta, Chief Electrical Engineer	Ganges Jute Mills, Kolkata	Member
7	Sandip Chakraborty, Executive (Marketing)	Siemens Ltd, Kolkata	Member
8	Tara Shankar Lahiri, Electrical Engineer	Hastings Jute Mills, Kolkata	Member
9	Kamal Kumar Mandal, Senior Electrical Engineer	Hukumchand Jute Mills	Member
10	Abhay Kumar Nevatia, Member, IJMA, Kolkata	Hastings Jute Mills, Kolkata	Member
11	Ranjan Gangopadhyay, Senior Training officer	Supervisors' Training Centre, Kanchrapara , Eastern Railway	Member
12	RRO.T.V.Mathew, Principal	Donbosco, Howrah	Member
13	Sibesh Kundu, Senior Instructor	Donbosco, Howrah	Member
14	Subrata Kr Das, Assistant.Director	Directorate of Industrial Training, Govt of West-Bengal	Member
15	Shivaji Samaddar, Senior Engineer	Ambuja Reality, Kolkata	Member
16	MD. Shakful Hassan, Foreman	ITI, Kalyani	Member
17	Anil Kumar ,Joint Director	CSTARI,Kolkata	Member
18	M. C.Sharma, Joint Director	CSTARI,Kolkata	Member
19	L.K.Mulherjee, Deputy Director	CSTARI,Kolkata	Member
20	A. Nandi, Deputy Director	CSTARI,Kolkata	Member
21	P.K.Dutta, Assistant Director	CSTARI., Kolkata	Member
23	S.B.Sardar, Assistant Director	CSTARI., Kolkata	Member
24	R.N.Manna, Training Officer.	CSTARI., Kolkata	Member