

REDESIGNED MODULES FOR THE SECTOR

OF

BAMBOO FABRICATION

**UNDER
MODULAR EMPLOYABLE SKILLS (MES)**

Redesigned in – 2014

By
Government of India
Directorate General of Employment & Training
Ministry of Labour & Employment (DGET)

Preface

The redesigned modules of Bamboo Fabrication Sector consist of SEVEN modules with the following details:

Module No	Module Name	Competency as per NCO Code	Space Norms	Power Norms	Unit Size	Entry Qualification/ Trg. Hrs
BMB701	Primary Bamboo Processing	7429.90	60 sq .m (Minimum size of one side to be 04m)	02 KW	20	8 th Pass + 14 yrs of age 500 Hrs
BMB702	Mechanic for Bamboo Machineries	7233.38	60 sq .m (Minimum size of one side to be 04m)	02 KW	20	8 th Pass + 14 yrs of age 500 Hrs
BMB703	Secondary Processing of Bamboo	7429.90	60 sq .m (Minimum size of one side to be 04m)	02 KW	20	8 th Pass + 14 yrs of age 500 Hrs
BMB704	Bamboo Construction	7429.90	60 sq .m (Minimum size of one side to be 04m)	02 KW	20	8 th Pass + 14 yrs of age 500 Hrs
BMB705	Bamboo Handicraft	7429.90	60 sq .m (Minimum size of one side to be 04m)	02 KW	20	8 th Pass + 14 yrs of age 500 Hrs
BMB706	Bamboo Mat and Blinds Weaving	7424.35	60 sq .m (Minimum size of one side to be 04m)	02 KW	20	8 th Pass + 14 yrs of age 500 Hrs
BM&07	Bamboo Furniture Making	7424.10	60 sq .m (Minimum size of one side to be 04m)	02 KW	20	8 th Pass + 14 yrs of age 500 Hrs

GENERAL INFORMATION FOR PRIMARY BAMBOO PROCESSING

Name of Sector	FABRICATION
Name of Module	Primary bamboo Processing
MES Code	BMB701
Competency as per N C O Code	7429.90
Duration of Course	500 Hrs
Entry Qualification of Trainee	8 th Pass + 14 yrs of age
Unit size (No. Of trainees)	20
Power Norms	2.0 KW
Space Norms (Workshop and Class Room)	60 sq.m Minimum size of one side to be 04m.
Instructors Qualification	Bachelor Degree in Civil/Mechanical Engineering with one year Experience in Bamboo fabrication work OR Diploma in Civil/Mechanical Engineering with two years Experience in Bamboo fabrication OR NTC/ NAC in Bamboo Technology with three years of Teaching or Industrial experience in Bamboo fabrication work OR 10 th pass with five years of Teaching or Industrial experience in Bamboo fabrication work

Terminal Competency

: After completion of this training the Participant would be able to:

- (a) Basic knowledge of Cultivation of Bamboo
- (b) Make proper utilization of bamboo
- (c) Processing of bamboo
- (d) Preservation of Bamboo and Bamboo and Bamboo products.

Content:

SL. NO.	THEORY	PRACTICAL
1	Basic Knowledge of bamboo cultivation and various techniques of bamboo propagation ,diseases-its remedies and prevention	Field visit for nursery techniques and cultivation of bamboo
2	Methods of bamboo treatment (Ancient & modern).	Use of Borax, Boric, smoke chamber & other chemical process.
3	Knowledge of bamboo history. Its day to day utilization & Industrialization. Modern application of bamboo products. Future prospects of bamboo technology.	Demonstration on day to day utilization of different types of bamboo. Modern application of bamboo products.
4	Knowledge of safety & precautions taken in bamboo work. Introduction of various hand Tools and their brief description. Types of hand Tools & their Speciation	Handling of safety equipments and their applications. Handling of various hand tools-Hand sawing, skinning, filing etc. Proper upkeep & maintenance
5	Knowledge of machine Tools like Drill machine etc which are require to make bamboo items	Practice of drilling & other machineries. Preventive maintenance of machineries
6	Knowledge of different measuring Tools & Conversion table	Practice of measurement of all systems
7	Knowledge of various joints, method of joints & uses of joints.	Practice in tongue & groove joint, male & female joint, bolt fastening joint, Overlapping joint, U-Shape joint, Horizontal & Vertical joint etc
8	Method of colouring the bamboo.	Practice with various chemical/ natural dyes for colouring
9	Knowledge of bending, buffing, polishing of bamboo.	Use of blow l amp (LPG, and Kerosene) and its precaution.
10	Knowledge of making various jigs and fixtures for uniformity of the products.	Practice on jig and fixture making.
11	Concept of Quality assurance. Method of proper packaging of finished products & proper storing.	Practice on packaging if require & storing.
12	Knowledge of transportation & marketing. Concept of sales services. Calculation of cost of finished Bamboo.	Survey the Bamboo market. Arrange the Transport service.
13	Project work	

Lists of Tools & Equipments for a batch of 20 trainees

SL. No.	Description of tools	Qty
1	Adjustable Hacksaw	20 nos.
2	Hand saw	20 nos.
3	Common Hacksaw	5 nos.
4	Flat Chisel (1/2",1",1/4")	20 nos each
5	Half round Chisel (1/2",1/4",1")	20 nos.each
6	Flat File (8",10")	20 nos,each
7	Wood Planner	5 nos.
8	Half Round File	5 nos.
9	Pruning Scissor(Fine Cut)	20nos
10	Combination Stone (Sharpening Stone)	5 nos.
11	Hand saw (450mm)	5 nos.
12	Hunter's saw	5 nos.
13	Screw driver (300 mm)	16 nos.
14	Claw Hammer (500 gms)	20 nos
15	Hammer (250gms)	5 nos
16	Dhau	20 nos.
17	Round Knife	5 nos.
18	Radial Hand splitter (4.8.12.16 blades)	4 nos.
19	Tripura Dhau	8 nos.
20	Foldable knife	20 nos.
21	Multi purpose Knife	5 nos.
22	Handrill	4 nos.
23	Electric Handrill	2 nos.
24	IDC Gauge	5 nos.
25	Steel Rule	5 nos.
26	Folding scale	5 nos.
27	Blow lamp	5 nos
28	Stand Drill Machine (1")	1 nos
29	Carbide Drill Bit sets (Including 5 nos bits)	5 nos
30	Nose plier	5 nos
31	Plus	5 nos

**GENERAL INFORMATION FOR PRIMARY MECHANIC FOR BAMBOO
MACHINERIES**

Name of Sector	FABRICATION
Name of Module	Mechanic for Bamboo Machineries
MES Code	BMB702
Competency as per N C O Code	7233.38
Duration of Course	500 Hrs
Entry Qualification of Trainee	8 th Pass + 14 yrs of age
Unit size (No. Of trainees)	20
Power Norms	2.0 kW
Space Norms (Workshop and Class Room)	60 Sq.m Minimum size of one side to be 04m.
Instructors Qualification	Bachelor Degree in Civil/Mechanical Engineering with one year Experience in Bamboo fabrication work OR Diploma in Civil/Mechanical Engineering with two years Experience in Bamboo fabrication OR NTC/ NAC in Bamboo Technology with three years of Teaching or Industrial experience in Bamboo fabrication work OR 10 th pass with five years of Teaching or Industrial experience in Bamboo fabrication work

Terminal Competency: After completion of this training the Participant would be able to:

Take Safety measures, care & maintenance of Machineries used in Bamboo processing and Bamboo products.

Content:

Wk NO.	THEORY	PRACTICAL
1	Knowledge of different machineries used in bamboo items & their proper utilization.	Operating the different machines used in bamboo Sector.
2	Knowledge of Cross Cutting machine & finding the defects & remedies.	Operating the Cross Cutting machine & proper maintenance of machine.
3	Knowledge of Radial Splitting machine and Automatic Splitting machine. Find out the defects & remedies.	Operating the Radial Splitting machine & Automatic Splitter machine. Proper maintenance of machines.
4	Knowledge of Knot removing machine. Find out the defects & remedies.	Operating the Knot removing machine Proper maintenance of machines.
5	Knowledge of Polishing machine. Find out the defects & remedies.	Operating the Polishing machine. Proper maintenance of machine.
6	Knowledge of manual slivering machine. Find out the defects & remedies.	Operating the manual silvering machine. Proper maintenance of machine.
7	Knowledge of Round sticks making machine. Find out the defects & remedies.	Operating the Round stick making machine. Proper maintenance of machine.
8	Knowledge of Hand drilling & Portable electrical drilling machine. Find out the defects & remedies.	Operating the Hand drilling & Portable electrical drilling machine. Proper maintenance of machine.
9	Knowledge of machine Planer. Find out the defects & remedies.	Operating the machine Planer. Proper maintenance of machine.
10	Knowledge of Saw machine. Find out the defects & remedies.	Operating the Saw machine. Proper maintenance of machine.
11-12	Observing the various defects of all machines & proper precautions & remedies taken. Knowledge of maintenance work.	Cleaning of all machines and use proper oiling & lubrication & find out each defects & their remedies.
13	Project work	

Lists of Machines, Tools & Equipments for a batch of 20 trainees

List of Machines

SL. No.	Description of tools	Qty
1	Bamboo Cross cutting(Heavy Duty)	1 no
2	Bamboo Portable Cross cutting	1 no
3	Bamboo Radial Splitting(Chain type)	1 no
4	Mitre Saw (Bosch/Hitachi)	1 no
5	Bamboo Square Stick Making Machine	1no
6	Bamboo Stick Polishing	1 no
7	Bamboo Stick Sizing	1 no
8	Bamboo Slicing(Heavy Duty)	1 no
9	Bamboo Double Side cutting, Parallel Splitter	1 no
10	Bamboo Two side planing cum Sizing	1 no
11	Bamboo Four side planing	1 no
12	Bamboo Treatment Plant	1 no
13	Bamboo Dying Tank	1 no
14	Bamboo out Side Knot removing	1 no
15	Manual and Automatic Slivering	1 no each
16	Round Stick making	1 no
17	Manual Square Stick Making Machine	1 No
18	Manual Slicing Making Machine for Agarbatti Stick	1 No

Wood related machine

1	Universal Grinding Machine	1 no
2	Table Grinding	1 no
3	Machine Saw	1 no
4	Machine Planer	1 no
5	Lathe machine	1 no

List of Hand Tools

1	Screw Driver	20 nos
2	Hand Gloves	20 nos

GENERAL INFORMATION FOR SECONDARY PROCESSING OF BAMBOO

Name of Sector	FABRICATION
Name of Module	Secondary Processing Bamboo
MES Code	BMB703
Competency as per N C O Code	7429.90
Duration of Course	500 Hrs
Entry Qualification of Trainee	8 th Pass + 14 yrs of age
Unit size (No. Of trainees)	20
Power Norms	2.0 kW
Space Norms (Workshop and Class Room)	60 Sq.m Minimum size of one side to be 04m.
Instructors Qualification	Bachelor Degree in Civil/Mechanical Engineering with one year Experience in Bamboo fabrication work OR Diploma in Civil/Mechanical Engineering with two years Experience in Bamboo fabrication OR NTC/ NAC in Bamboo Technology with three years of Teaching or Industrial experience in Bamboo fabrication work OR 10 th pass with five years of Teaching or Industrial experience in Bamboo fabrication work

Terminal Competency

: After completion of this training the Participant would be able to:

- (a) Make proper finishing and packaging of bamboo products
- (b) Manufacture High-end hand made bamboo products
- (c) Manufacture Industrial bamboo Products

Content:

WK. NO.	THEORY	PRACTICAL
1	Brief description about secondary processing machine	Demonstration on Secondary processing machine
2	Concept of Secondary Processing and relation with primary processing	Demonstrate primary process
3	Process lay out of various industrial products and uses of respective machineries	Manufacturing of Bamboo Mat Board, Flooring Board, Strand Board and other laminated products which are substitute of wood
4	Detailed Knowledge about safe operation and maintenance of various secondary processing machineries	Practice on various machineries
5-8	Knowledge of various types of finishing in bamboo works. <ul style="list-style-type: none"> • Knowledge of polishing & machineries used. • Knowledge of Buffing & machineries used. • Knowledge Bamboo Dyeing & machineries used. • Knowledge of method of colouring & accessories used. 	Practice on various bamboo works for Finishing:- <ol style="list-style-type: none"> 1. *Polishing* 2. *Buffing* 3. *Dyeing* 4. *Colouring*
9	Knowledge of:-Decorative Techniques for Lamination in Bamboo.	Practice the Lamination in Bamboo by Decorative process.
10	Concept of Quality assurance.	Checking the finished products in size & shape.
11	Knowledge of storing the Bamboo/ Bamboo items & storing for long terms.	Method of Storing in various process:- <ul style="list-style-type: none"> • Storing for short terms. • Storing for long terms.
12	Knowledge of Packaging:- <ul style="list-style-type: none"> • Packaging for short distance Transportation. • Packaging for long distance Transportation. 	Method of Packaging in various process:- <ul style="list-style-type: none"> • Packaging for short distance Transportation. • Packaging for long distance Transportation.
13	Project work	

Lists of Tools & Equipments for a batch of 20 trainees

SL. No.	Description of tools	Qty in no
1	Bamboo Hot press for mat board and laminated board	1
2	Resign Applicator	1
3	Universal Planner	1
4	Heavy Duty Sanding Machine	1
5	Double end cutting & trimming machine	1
6	Five Side planning Machine	1
7	Coating machine/Spray booth finishing	1
8	Portable Hand Planner (Automatic)	1
9	Portable Sanding machine	1
10	Spray Gun	2
11	Treatment tank	1
12	Dying Chamber (Stainless steel tank 2ftX2ft)	2
13	Air Compressor- 2HP, 7Kg, 132 litre	1
14	Pneumatic Pin gun	1

GENERAL INFORMATION FOR BAMBOO CONSTRUCTION

Name of Sector	FABRICATION
Name of Module	Bamboo Construction
MES Code	BMB704
Competency as per N C O Code	7429.90
Duration of Course	500 Hrs
Entry Qualification of Trainee	8 th Pass + 14 yrs of age
Unit size (No. Of trainees)	20
Power Norms	2.0 KW
Space Norms (Workshop and Class Room)	60 sq.m Minimum size of one side to be 04m.
Instructors Qualification	Bachelor Degree in Civil/Mechanical Engineering with one year Experience in Bamboo fabrication work OR Diploma in Civil/Mechanical Engineering with two years Experience in Bamboo fabrication OR NTC/ NAC in Bamboo Technology with three years of Teaching or Industrial experience in Bamboo fabrication work OR 10 th pass with five years of Teaching or Industrial experience in Bamboo fabrication work

Terminal Competency

:After completion of this training the Participant would be able to:

- (a) Build low cost bamboo House as well as for aesthetic look
- (b) Use bamboo as raw materials for various construction jobs

Content:

WK. NO.	THEORY	PRACTICAL
1	<p>Orientation of construction works:- Knowledge of construction works on Bamboo & its importance. Type of construction works in Bamboo making. Different parts of construction works</p>	<p>Trust of Building orientation:- Draw the neat sketch: - Door, roof, window etc for Bamboo works. Make the different parts of Bamboo building. Field visit in Bamboo production nursery.</p>
2-3	<p>Knowledge of Construction materials:- Bamboo, Stone Chips, Sand, Cement, Wood, Lime, Steel-Rod, Nut-bolt, PVC sheet and other relating materials. Knowledge of Foundation of building. Precaution taken for proper foundation of earth.</p>	<p>Familiarizations of different Constructional materials:-Type of Bamboos as per classification, brick, stone, sand, nut-bolt, binding wire, PVC sheet and other relating materials. Field visit in local market.</p>
4-5	<p>Knowledge of bonding materials:-</p> <ul style="list-style-type: none"> • Types of Bonds • Necessity of Bonds • English Bonds • Bonds in pillars. <p>Ratio of cement & sand in mortar for different types of brick masonry. Method of Construction for covering material of Tee racing of roofs.</p>	<p>Preparation of mortar & brick masonry with proper utility of Tools within the initial setting time of the cement. Method & Tool use in Construction:-</p> <ul style="list-style-type: none"> • Wall & corner junction in super structure. • Foundation in English Bond, Jig-Jag Bond, Flemish Bond, • Stretcher Bond, header Bond in pillars, & walls etc. • Bone Bond in brick flooring. • Tracing of roof, first & second class of Mud roofs.
6-7	<p>Apply tools and equipment used on construction sites. Range: metric tape, plumb line, saws, chisel, hand drill, surface planner, trowel, tumbler, sovel.</p>	<p>Care and maintenance of bamboo tools and machinery is described as recommended by the manufacturer's instructions. Range: blades, knives, cutting edges, adjustment, cleaning, power source, guarding.</p>
8-9	<p>Select and use portable power tools. Range: metric tape, saws, chisel, hand drill, surface planner, trowel, tumbler, sovel</p>	<p>Tools are selected in terms of identified work operations. Tools are set up and used in accordance with manufacturer's specifications, work operations and site specific safety plan. Tools are used without injury to personnel and without damage to equipment or work. Range: guards, fences, personal protective equipment, power source</p>

		and electrical safe guards
10	Set up a leveling instrument on a construction site.	<p>Levelling work required is identified in terms of working drawings and specifications. Levelling instrument is set up and adjusted.</p> <p>Range: evidence is required for a minimum of two types of levelling equipment which can include but is not limited to - straight edge and water level.</p> <p>Systems for measuring and recording are selected to meet site requirements.</p>
11	Demonstrate knowledge of site demarcation and layout of building as per the scope of work	<p>Demarcation of building area in relation to site features is described in accordance with job requirements.</p> <p>Range: center line positions, plinth level, site level, drain level, slope if any,</p>
12	Concept of Quality assurance. Method of proper packaging of finished products & proper storing.	Checking the items as shape & size. Practice on packaging if require & storing.
13	Project work	

Lists of Tools & Equipments for a batch of 20 trainees

SL. No.	Description of tools	Qty
1	Land measuring plastic tape (30 met long)	5 nos
2	Land measuring steel tape (30 met long)	5 nos
3	Bucket G.I. (30cm dia)	5 nos
4	Mason plumber - spirit level	5 nos
5	Big hammer with handle-1/2 kg	5 nos
6	Line pin corner block	5 nos
7	Mortar Board (2mx2m)	4 nos
8	Wire brushes	5 nos
9	Spade	5 nos
10	Steel float	5 nos
11	Spirit level (30 cm long)	5 nos
12	Chisel (25 cm long) with hammer	5 nos each
13	Ladder aluminum (30 m)	1 nos
14	Bench vice	1 nos
15	C. Clamp	5 nos
16	Gloves (Canvas)	20 sets
17	Grinding machine with various polishing stones	1 no
18	Brush for painting	5 nos
19	Drawing board with facility of parallel bar	1 no
20	Mini drafter	5 nos
21	Erasing shield small size	5 nos
22	Template- Architects & builders	5 nos
23	Modern Household & Office furniture	1 set
24	Design book/ Catalogue	1 set
25	Mitre Saw	1 set
26	Electrical Hand Drill Machine	2 set
27	Clamps or Carpentry Vice (4',8')	5 sets

GENERAL INFORMATION FOR BAMBOO HANDICRAFT

Name of Sector	FABRICATION
Name of Module	Bamboo Handicraft
MES Code	BMB705
Competency as per N C O Code	7429.90
Duration of Course	500 Hrs
Entry Qualification of Trainee	8 th Pass + 14 yrs of age
Unit size (No. Of trainees)	20
Power Norms	2.0 KW
Space Norms (Workshop and Class Room)	60 sq.m Minimum size of one side to be 04m.
Instructors Qualification	Bachelor Degree in Civil/Mechanical Engineering with one year Experience in Bamboo fabrication work OR Diploma in Civil/Mechanical Engineering with two years Experience in Bamboo fabrication OR NTC/ NAC in Bamboo Technology with three years of Teaching or Industrial experience in Bamboo fabrication work OR 10 th pass with five years of Teaching or Industrial experience in Bamboo fabrication work

Terminal Competency

:

After completion of this training the Participant would be able to:

- (a) Make Bamboo Handicraft Products as per product Design
- (b) Make Assessment of demand and production of different types of bamboo products.
- (c) Plan production strategies for the bamboo products

Content:

WK. No.	THEORY	PRACTICAL
1	<p>Knowledge of various Household product made of Bamboo.</p> <p>Study the health of selective existing units in bamboo craft industry</p>	<p>Observe various type of handicrafts & draw the neat sketch of each type of it.</p> <p>Survey of different bamboo craft industry. Identification of customer segment for bamboo handicraft sector.</p>
2	<p>Knowledge regarding Drawings of various Bamboo material Handicraft Products.</p>	<p>Draw neat sketch with free hand of various Handicraft Products like gift items, stationery items furniture items, jewelers luggage etc.</p>
3	<p>Knowledge regarding Design of various Bamboo material & Handicraft Products. Method of design.</p> <p>Knowledge of making Model & Mock up as per selection of marketable product.</p>	<p>Design various Handicraft Products like gift items, stationery items furniture items, jewelry luggage etc.</p> <p>Practice of making model & mock up as per the trend and demand of present market & time.</p>
4	<p>Design luggage by Bamboo.</p>	<p>Make luggage by Bamboo material of various design.</p>
5	<p>Design lamp shades by Bamboo.</p>	<p>Make decorative lampshades, vase, show-piece etc by Bamboo material.</p>
6	<p>Design Jewelry articles.</p>	<p>Make different Jewelers articles by Bamboo materials.</p>
7	<p>Design Stationery items.</p>	<p>Make Stationery items by Bamboo materials.</p>
8	<p>Design Kitchen & household product.</p>	<p>Make Kitchen & household product by Bamboo material.</p>
9	<p>Design Carriers items.</p>	<p>Make Carriers items by Bamboo material.</p>
10	<p>Design Gift Box.</p>	<p>Make Gift Box by Bamboo material.</p>
11	<p>Design various type of Tray.</p>	<p>Make various type of Tray by Bamboo material.</p>
12	<p>Concept of Quality assurance. Method of proper packaging of finished products & proper storing.</p> <p>Estimate the total cost of Bamboo Handicraft Product.</p> <p>Knowledge of transportation & marketing.</p> <p>Concept of sales services.</p>	<p>Check the items as shape & size. Practice on packaging & storing.</p> <p>Survey Bamboo Handicraft Product market & fare in different places. Arrange Transport service.</p>
13	<p>Project work</p>	

Lists Tools & Equipments for a batch of 20 trainees

WK. No.	Description of tools	Qty
1	Working Table (5ft x 8 ft)	1 nos
2	Round bamboo cross cutting machine	1 nos
3	Bamboo manual splitting	1 nos
4	Bamboo slicing machine	5 no.s
5	Square stick making macine	1 nos
6	Round stick polishing machine	1 nos
7	Stand drill machine	1 nos
8	Tarning machine	1nos
9	spray	2nos
10	Bamboo Tool Kit Boxes including 22 nos various small tools	5 nos
11	Portable jig saw	2 no
12	Pneumatic nailer	1 no
13	Portable sanding machines	1 no
14	Gas torch	1 no

GENERAL INFORMATION FOR BAMBOO MAT AND BLINDS WEAVING

Name of Sector	FABRICATION
Name of Module	Bamboo Mat and Blinds Weaving
MES Code	BMB706
Competency as per N C O Code	7424.35
Duration of Course	500 Hrs
Entry Qualification of Trainee	8 th Pass + 14 yrs of age
Unit size (No. Of trainees)	20
Power Norms	2.0 KW
Space Norms (Workshop and Class Room)	60 sq.m Minimum size of one side to be 04m.
Instructors Qualification	Bachelor Degree in Civil/Mechanical Engineering with one year Experience in Bamboo fabrication work OR Diploma in Civil/Mechanical Engineering with two years Experience in Bamboo fabrication OR NTC/ NAC in Bamboo Technology with three years of Teaching or Industrial experience in Bamboo fabrication work OR 10 th pass with five years of Teaching or Industrial experience in Bamboo fabrication work

Terminal Competency

: After completion of this training the Participant would be able to:

- (a) Manufacture Bamboo mats of various designs by using different weaving techniques
- (b) Manufacture Bamboo Blind of various designs by using different Blind weaving techniques
- (c) Manufacture various innovative handicraft & packaging items by using Bamboo Mat.

Content:

WK. NO.	THEORY	PRACTICAL
1	Selection of bamboo species which is suitable for mat weaving. Selection of proper Machineries, Tools and Equipment for mat making process	Identify bamboo physically (Skin colour, Sizes, diameter, etc) Practice on Machines.
2	Identify process lay out of mat making	Make mat by manually & using bamboo slivers & bamboo stick. Practice on Automatic weaving machine & Manual Loom.
3	Methods of colouring and dyeing of slivers and stick.	Make different colour on bamboo slivers and stick using chemical and natural dyeing materials
4	Various weaving patterns on Bamboo Mat using slivers and also Bamboo Mat using stick	Hand practice of mat making. Identify thickness, width, length of slivers, Identify length, diameter, quality of stick/
5	Knowledge about the sources of accidents & prevention from accidents. Necessary precautions & take remedies. Known necessary safety & precautions taken in each m/c's. Familiarization with organization & their coir Mat Weaving manufacturing unit.	Safety precautions taken & use of safety equipments including fire fighting equipments. First aid practice & treatment. Handling of tools, equipments, & machineries in the section & proper utilization & upkeep. Identifying of tools from store & procurement of raw materials as per need.
6	Knowledge of techniques for Mat weaving	Making mat by weaving.
7-8	Knowledge of techniques for Blinds weaving by automatic power loom and hand loom.	Making Blinds by weaving.
9-10	Knowledge of different standard dimensions of finished Products. Calculation of weight of Finished Products. Calculation of cost of finished products.	Making the coir felt.
11	Concept of Quality assurance. Method of proper packaging of finished products & proper storing.	Practice on packaging & storing.
12	Knowledge of transportation & marketing. Concept of sales services.	Survey of product market. Arrange the Transport service.
13	Project work	

Lists of Tools & Equipments for a batch of 20 trainees

SL.NO	DESCRIPTION OF TOOLS	QUANTITY
1	Slivering machine	1 nos
2	Cross cutting Machine	1 nos
3	Radial Splitting Machine	1 nos
4	Hand loom for Blind weaving	5 nos
5	Automatic blind weaving loom	1nos
6	Sizing/ cutting machine	1nos
7	Masks	20 nos
8	Gloves	20 pair
9	Aprons	20 pair
10	Eye Glass	20 pair
11	Inside Knot removing cum Slicing Machine	1 nos

GENERAL INFORMATION FOR BAMBOO FURNITURE MAKING

Name of Sector	FABRICATION
Name of Module	Bamboo Furniture Making
MES Code	BMB707
Competency as per N C O Code	7424.10
Duration of Course	500 Hrs
Entry Qualification of Trainee	8 th Pass + 14 yrs of age
Unit size (No. Of trainees)	20
Power Norms	2.0 KW
Space Norms (Workshop and Class Room)	60 sq.m Minimum size of one side to be 04m.
Instructors Qualification	Bachelor Degree in Civil/Mechanical Engineering with one year Experience in Bamboo fabrication work OR Diploma in Civil/Mechanical Engineering with two years Experience in Bamboo fabrication OR NTC/ NAC in Bamboo Technology with three years of Teaching or Industrial experience in Bamboo fabrication work OR 10 th pass with five years of Teaching or Industrial experience in Bamboo fabrication work

Terminal Competency

: After completion of this training the Participant would be able to:

- (a) Make various Bamboo furniture items
- (b) Make layout of round bamboo & molded Bamboo furniture

Content:

WK. NO.	THEORY	PRACTICAL
1	Knowledge of various Household & public furniture made of Bamboo.	Observe various type of Furniture & draw the neat sketch of each type of furniture.
2	Knowledge of different jigs & fixture for Bamboo making furniture. Knowledge of other related materials for making Bamboo furniture:- Cane, nail, wood, adhesive, bending wire, plastic rope, nut-bolt etc.	To make Bamboo furniture with the use of related materials.
3-4	Sequence of operations to make different furniture by Bamboo.	To make different Bamboo furniture:- Sofa Set, Chair, Table, Bed, Beach & Garden, Dining Chair, Wall Chair, Swing Chair, Relaxing Chair, Centre Table etc.
5	Concept of Quality assurance. Method for proper packaging of finished products & proper storing.	Checking the items as shape & size. Practice on packaging & storing.
6	Estimate the total cost of Bamboo furniture. Knowledge of transportation & marketing. Concept of sales services.	Survey of the Bamboo market. Arrange the Transport service.
7-8	Sequence of operations to make different furniture by Bamboo.	To make different Bamboo furniture:- Sofa Set, Chair, Table, Bed, Beach & Garden, Dining Chair, Wall Chair, Swing Chair, Relaxing Chair, Centre Table etc.
9-10	Knowledge of making Model & Mock up as per selection of marketable product.	Practice of making model & mock up as per the trend and demand of present market & time.
11	Concept of Quality assurance. Method of proper packaging of finished products & proper storing.	Check the items as shape & size. Practice on packaging & storing.
12	Knowledge of transportation & marketing. Concept of sales services.	Survey Bamboo Handicraft Product market & fare in different places.
13	Project work	

Lists Tools & Equipments for a batch of 20 trainees

SL. No.	Description of tools	Qty
1	Working Table (5ft x 8 ft)	5 nos
2	Cross-cut machine	1 nos
3	Bamboo Tool Kit Boxes including 22 nos various small tools	5 nos
4	External knot removing machine	1 nos
5	Universal wood working cum bamboo application machine	1 nos
6	Belt and disc Sander	1 nos
7	Driller	2 nos
8	Compressor with painting system	1 nos
9	Sharpening machine	1 nos
10	Rough planner	1 nos

LIST OF TRADE COMMITTEE MEMBERS

Sl. No	Names & Designation	Organisation	Remarks
Members of Sector Mentor council			
1	Dr.G.Buvanashakaran	AGM, WRI, Trichy	Chairman
2	Dr.K.Ashokkumar	AGM, BHEL, Trichy	Member
3	Prof. Jyothi Mukhopadhy	IIT, Ahmedabad	Member
4	B.Pattabhiraman	MD, GB Engineering, Trichy	Member
5	Dr.Rajeev kumar	IIT, Mandi	Member
6	Dr. Vishalchauhan	IIT, Mandi	Member
7	Shri D.K.Singh	ITI, Kanpur	Member
8	Shri. Navneet Arora	IIT, Roorkee	Member
9	Shri. R. K. Sharma	Head, SDC, JBM Group, Faridabad	Member
10	Shri. Puneet Sinha	Deputy Director, MSME, New Delhi	Member
Mentor			
1	Shri.Deepankar Mallick	Director of Training, DGE&T Hq,	Mentor
Members of Core Group			
1	Shri M Thamizharasan	JDT, CSTARI, Kolkata	Member
2	Shri M Kumaravel	DDT, FTI , Bangalore	Member
3	Shri Bijit Kumar Singha	DDT, CSTARI, Kolkata	Team Leader
4	Shri Gopalakrishnan	NIMI, Chennai	Member
5	Shri Prithiraj Rava,	JDT, DECT, Guwahati, Assam	Member
6	Ms.Moushumi Sen,	DDT, DECT, Guwahati, Assam	Member
7	Ms.Monalisha Das,	Consultant, Bamboo Development Agency	Member
8	Ms.Moni Das,	Proprietor, Neelam Bamboo Blinds & Allied Craft, Guwahati, Assam	Member
9	Shri Ranjit Borthakur,	Superindent, ITI, Kokumghu, Assam	Member
10	Shri Manjuma B.Talukdar	H.P.Institute, Guwahati, Assam	Member