SYLLABUS

For The Trade of

FOOTWEAR MAKER

Under.

Craftsmen Training Scheme
&
Apprenticeship Training Scheme

Revised in – 2007

Government of India
Ministry of Labour & Employment (DGE&T)
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE
EN Block, sector – V, Salt Lake,
Kolkata- 700091

List of members attended the Trade Committee Meeting for revising the Syllabus for the Trade of "Foot Wear Maker" under CTS & ATS held on 10.05.2007

Sl.No.	Name	Designation/Representing Org.	
	S/Sri		
1.	D.N.Biswas	Dy. Director General, DGE & T	Chairman
2.	Sunil Bhadra	Consultant, C.L.R.I., Kolkata	Member
3.	D.Chakraborty	Dy. Director, S.I.S.I. Kolkata	Member
4.	Surojit Mondal	Principal, I.T.I., Kalyani.	Member
5.	Alok Kr. Basu	Supdt., Govt. College of LeatherTechnology Kolkata-20	Member
6.	Paresh Chandra Mukherjee	Consultant Safety Products & Services.	Member
7.	Nemai Ranjan Saha	Consultant, S. R. Leather.	Member
9.	Mrs. Aditi Ghose	Bensen Industries., Kolkata	Member
10.	T. Mukhopadhyah	Dy. Director, CSTARI	Member
11.	R.R.Mannewar	Dy. Director, CSTARI	Member
12.	Amalendu Chakraborty	Asstt. Director, C.S.T.A.R.I.	Member
13.	R.N.Manna	Training Officer, C.S.T.A.R.I.	Member
14.	P.K.Dutta	Training Officer, C.S.T.A.R.I.	Member

GENERAL INFORMATION

1.	Name of Trade	:	Foot wear Maker
2.	N.C.O. Code No.	:	801.10
3.	Duration Of Craftsmen Training	:	One Year
4.	Entry Qualification	:	Passed VIII class examination
5.	Duration of Apprenticeship Training	:	Two Years (Including one year craftsmen Training)
6.	Rebate to Ex-ITI Trainees	:	Full
7.	Ratio of Apprentices to Worker	:	1 : 7
8.	Space Required	:	13 – 14 Sq.ft. per trainee

NOTE FOR APPRENTICESHIP TRAINING

1. The Practical Training Programme of Apprentices under ATS (Apprenticeship Training Scheme) should be as per the facilities available in the Establishment / Industry.

2. At the end of shop floor training, an apprentice shall appear for a final examination to be conducted at establishment level based on the actual shop floor training received by the apprentices. This examination shall comprise of assessment of work diaries maintained by the apprentices and Viva Voice to be conducted by an external examiner (other than an official directly responsible for shop floor training).

SYLLABUS FOR THE TRADE OF **FOOTWEAR MAKER** UNDER CRAFTSMEN TRAINING SCHEME

Period Of Training : One Year

WEEK NO.	PRACTICAL	THEORY
01	Familiarisation with the Institute. To make the trainees familiar with the shop discipline, layout of the shop, layout of the machines, equipment, etc. installed in the shop.	Introduction to the trade. Importance of the trade in the development of the industrial economy of the country.
02	Type of practical training to be followed, maintenance and handling of tools and equipment of the section.	Recreational and medical facilities and extra curricular activities of the Institute (All necessary guidance to be provided to the new comers to become familiar with the working of the Industrial Training Institute system including stores procedures).
03	Safety precautions including fire fighting equipment, Accidents, First Aid practice and treatment.	Safety precautions. Elementary First Aid and treatment.
04	Identification of different hand tools used in the shop. Indenting of tools from store.	Hand tools used by a trainee in the section, their kinds, uses, names and function, process of holding. Machines employed in general footwear makers' shops, their nomenclature and description, operational principles and use.
05	Care and maintenance of hand tools and machines. Safety precautions. Its importance, cleanliness of the shops.	Related Instruction – Subjects to be taught and achievement to be made.
06 & 07	Sharpening of tools, scissors, knives, & other cutting tools, method and process of holding the tools.	Common hand tools used by a Footwear maker. Their kinds, uses and materials from which they are made. Their names and functions. Specification of different tools used in footwear manufacture- their nomenclature and description. Sharpening of tools and scissors, knives, awls by hand and machines. Different types of needles and part of the needle, type of cutting edges in a needle.

08.	Practice on Leather Cutting by hand and machine. Measurement of the leather-hides & skins by different methods.	Stores such as Leather, rubber soles, substitute materials such as synthetic rubber, polyvinyl cloth, polyurethane, thermoplastic rubber, Ethylene vinylene acetate, Polyurethene coated polyvinyl chloride etc. and their utility.
9 & 10	Practice of using grinding materials Stitching practice of different types	Various grinding materials and uses. Choice and purchase of raw materials and sources of supply. Fabric and coated fabrics. Types of stitching threads (cotton, nylon, polyester) Properties of threads and terminology – Fibres, yarn, count, twist, ply, thread no. and sizes.
11 to 13	Designing, pattern cutting and template making for different types of footwear such as sports shoe, walking shoe, running shoe, track shoe, field shoe and safety shoe. Preparation of insole pattern, arithmetic method.	Lasts their types and standard dimensions their variations for different purposes and adaptation for orthopaedic work. Sectional block hinged and finished lasts and their utility. Lasts and plates. Lasts for deformed feet. Heel height, pitch and spring and their relationship in footwear manufacture.
14	Visit to tannery and Footwear Industries	Visit to tannery and Footwear Industries
15	General maintenance of machines – Brief idea about minor routine maintenance and safety aspect.	Leather – its different sections, their suitability for different purposes, upper leathers skins.
16	----- DO ----- Foot measurement – defects in foots. Measurement of leather – hides and skins by different methods.	Leather for bottom – buffalo, cow, hides, sections used for bottoming footwear, sole leather, mellowing, soling and reanging. Patent leathers and fabric used in the trade. Leather board insole, stiffener and counter board properties of leather board insole. Effect soft water, acids and alkalis, friction and heat on leather
17 & 18	Wooden lasts and fitting the same to measurement.	Human Foot, its exterior and description. Different shape of foot in other countries Foot arch, its shape and structure. The development of the foot. Its variations from infancy to maturity. The form of the foot in motion and its modification. Common defects of the foot. Their description and necessary adoptions to footwear. De-firmed feet.

19 & 20	Measurement of foot and assessing of size, Making of "Mean" Form and standards	Measurement – its principles and connections as applicable to footwear – Importance of metric system of measurement, Area measurement of leather. Area measurement of patterns, weights and measures
21 & 22	Clicking – Economical cutting of upper components and linings. Stitching leather by hand and machine	Hides and skins – their structure and quality. Flaying and defects. Parts of hides, their names and uses. Quality and substance in different parts and their variations. Stretch in skins – its extent and direction. Curing of hides and skins. Tanning of hides and skins and their types and their essential characteristics for different uses. Their identification and selection.
23 to 25	----- DO -----	Designing – Design and its principles – Fashion and its influence on footwear. Patterns and styles, their names and description, application and economical execution. Design of lasts for deformed feet and bespoke work.
26 & 27	Demonstration on Computer Aided design (C.A.D) Pattern grading by hand and machine.	Knowledge on Computer Aided Design (C.A.D)
28	Visit to a Footwear Industries	Visit to a Footwear Industries
29 & 30	Closing, skiving and application of different adhesives, folding of upper and assembling of upper and lining components.	Edges, seams and their treatment. Seam strength, stitches used in closing upper ornamentation. Adhesives used in footwear, their names and description, different types of adhesives and their applications such as Natural rubber solution, Rubber latex, Polychlorpine adhesives, Polyurethene adhesives, Neoprene adhesive, hotmelt adhesives, etc. hardener for adhesives, preparation and application. Backing up their leather.
31 & 32	Cutting bottom components economically, insole attachment and feathering. Preparation of toe and counter stiffeners. Drafting and lasting.	Sorting and matching cut components according to quality. Economic layout and utilisation of different sections for bottom components.
33 & 34	Welt stitching – Bottom filling, sole attaching and stitching, Heel fixing and finishing, single sole stitching and cemented method of construction.	Direct vulcanising process and direct injection process. Functions of Moulded Machine. Synthetic toe – Puff and Stiffeners,

	Basic idea about Moulding Machine. Manufacture of moulded shoes.	methods of their applications and types of solvent used for the purpose. Feathering – Preparation of stiffeners. Insole preparation, drafting, lasting, sole attaching, sole stitching, welt stitching, bottom filling, heal fixing, finishing.
35 to 37	Shoe sizes and fittings. Different shoe systems and fittings. International shoe size system. Preparation of casual shoes from various types of leather.	Waxes and polishes used in finishing – their names and application. Marks and blemishes – their character and process of removal.
38 to 40	Making shoes, Safety boots, Industrial Boots to sizes. Making of shoes of latest fashion. Repairing of boots and shoes, half soling, healing, resoling	Wastage – its proportions and limits. Waste cutting and their utilisation. Commercial calculations.
41	Visit to Footwear Industries	Visit to Footwear Industries
42 & 43	Exercise on calculation of material consumption, Reduction of wastage, Preparation of cost sheets for finished footwear.	Costing of footwear – Costing method of materials by weight and area.
44 to 47	Shoe dressings and finishes – cleaners, conditioners, fitters, shoe dressers, wax polishers, bottom finishes, solvent for shoe cleaners	Costs of finished products and their selling prices. Overhead costs and their distribution.
48	Demonstration of Quality control and Inspection of footwear. Testing of footwear and their assessment.	Marketing of finished goods.
49	**Visit to Industrial Establishment** The instructor should make it convenient to accompany trainees during their visit to establishments and explain the new types of machines used, if any (as they may not be provided in ITI's) and with the help of supervisor / foreman see that the trainees observe working of the new machines that are in use.	
50 & 51	REVISION	
52	TEST	

SOCIAL STUDIES: The syllabus has already been approved and is same for all the trades.

LIST OF TOOLS & EQUIPMENT FOR THE TRADE OF FOOTWEAR MAKER

(For a batch of 16 trainees)

SL. NO.	NAME OF THE ARTICLES	QUANTITY
1.	Wooden Clamps	16 Nos.
2.	Awls Welt Stitching	16 Nos.
3.	Awls Sole Stitching	16 Nos.
4.	Pricking awls	16 Nos.
5.	Scissors	16 Nos.
6.	Knives rampees	16 Nos.
7.	Pinchers	16 Nos.
8.	Compasses	16 Nos.
9.	Measuring tapes	16 Nos.
10.	Shoe hammers	16 Nos.
11.	Kit boxes 375 x 250 x 200 mm.	16 Nos.
12.	Stone slabs (Marble/cuddappa)	16 Nos.
13.	Size tapes shoe makers	16 Nos.
14.	Wooden blocks	16 Nos.
15.	Wooden lags	16 Nos.
16	Nail pullers	16 Nos.
17.	Iron lasts three lags	2 Nos.
18.	Iron (for part waist)	5 Nos.
19.	Fudge wheels	4 Nos.
20.	Sole decorating wheels	4 Nos.
21.	Edge setters	8 Nos.
22.	Shoe maker's knives	16 Nos.
23.	Punches of sizes and designs	16 Nos.
24.	Wooden / PVC lasts sizes 5 to 10 (Gents)	24 Pairs
25.	Wooden / PVC lasts boys sizes 1 to 4	8 Pairs
26.	Wooden / PVC lasts children sizes 4 to 13	20 Pairs
27.	Wooden / PVC lasts ladies size 2 to 7	12 Pairs
28.	Adhesives containers	16 Pairs
29.	Stove / Heater 1000 Watts	2 Nos.
30.	Enamel basin	4 Nos.
31.	Polishing brushes	4 Nos.
32.	Oil stone (25 x 50 x 150 mm)	6 Nos.
33	Micrometer (0-25)	6 Nos.
34.	Spring Divider	16 Nos.
35.	Indenting Scissors	16 Nos.
36.	Wooden Lags	16 Nos.
37.	Glass Plate (3mm-5mm thick) 750mm x 500mm	1 No.

MACHINES

1.	Sewing machine cylinder bed	4 Nos.
2.	Sewing machine industrial type flat bed	16 Nos.
3.	Upper leather skiving machine	1 No.
4.	Punching and eyeleting devices	1 No.
5.	Combined finishing machine	1 No.
6.	Sewing Machine Double Needle Flat Bed	1 No.
7.	Sewing Machine Post Bed	1 No.
8.	Splitting / Evening Machine Leathers	1 No.
9.	Hydraulic Clicking Machine	1 No.
10.	Stamping / Stampica Machine	1 No.
11.	Air Stuck : Pneumatic Cementing Press Machine	1 No
12.	Manual Sole Pressing Machine	1 No.
13.	Clicker Machine	1 No.
14	Skive Machine	1 No.
15	Decorating Machine	1 No.

FURNITURES

1.	Almirah	2 Nos.
2.	Trainee (Footwear) work bench	16 Nos.
3.	Show case	1 No.
4.	Work bench for clicking	8 Nos.
5.	Instructor's desk and chair	1 set
6.	Durries 200 x 250 mm	2 Nos.
7.	First Aid Box	1 No.
8.	Black Board with Easel	1 No.
9.	Stools and desk for trainee	1 No. each
10.	Work Table with vice guard	1 No. each

Syllabus for the Trade of "Foot wear Maker" under Apprenticeship Training Scheme

Period of Training: 2 years including 1 year Basic Training

The content of syllabus during first year training for the apprentices will be same as that of the syllabus of the CTS for the trade of "**Foot wear Maker**".

SHOP FLOOR TRAINING :

The operations or skills given below in this list should be learnt on the shop floor during apprentice training. The apprentices should have more practice on the shop floor on these operations or skills, which have been already learnt during basic training or Craftsmen training.

The following exercises will be carried out by individual trainees under the guidance of the instructor to avoid any wastage of raw materials and will be confirmed to the production of such articles as are required for use or for which there is a ready demand in the locality, in order to eliminate accumulation of stocks.:

1. Preparation of materials. Pre tanning and Post tanning process and operations.
2. Exercises in measuring thickness and area of finished leather. Use of measuring gauges and their maintenance.
3. Visual examination of defects in Hides & Skins. Examination of defects of upper and lining materials
4. Storage of leather
5. Practice in hand & machine clicking. Practicing in splitting; skiving machines
6. Designing and form cutting for CASUAL, DERBY, OXFORD, BROGUE, MOCASSION and MONK.
7. Pattern making and grading by hand and machine. Use of Pantograph.
8. Practice in layout marking & cutting components
9. Preparing lasts. Checking of lasts and standardization as per construction.
10. Pasting and inserting corners (Contours). Attaching insoles. Nailing heel seat.
11. Splitting of leather to the desired thickness.
12. Assembling cementing, folding, closing and finishing.
13. Pasting toe puffs.
14. Pulling over (drafting)
15. Toe lasting. Side lasting. Heel seat lasting.
16. Pounding. Roughing (in case of cemented construction). Cementing.
17. Practice in edge treatment by hand & machine, Eye letting machine.
18. Exercises in stitching machine and preparation of pullovers and their specifications.
19. Welt stitching. Removing Staples.
20. Trimming the lasted shoes. Attaching shanks. Bottom filling.
21. Attaching welted & other types of soles.
22. Rounding. Channel opening. Side stitching. Last removing.
23. Single sole. Heal seat nailing. Attaching head. Channel closing.
24. Leveling sole. Side & head trimming.
25. Sole & heel edge finishing. Sole buffing & finishing.
26. Cleaning of upper & finishing. Fixing socks lining.
27. Exercises in reinforcements: Ornamentation & finishing operations.
28. Use of pattern & gauges for checking components.
29. Operations & maintenance of footwear machineries e.g. Sewing machines, Skiving machines, Tools & equipments used in the department.
30. Inspection & boxing
31. Range building system and preparation of design catalogue.

As soon as the trainee has acquired the requisite grade of skill in the trade, he should undertake to cut, stitch and finish leather shoes of various kinds such as Derby, Oxford, Monk, etc.

RELATED THEORY

1. Foot disease and abnormalities. Arches of feet. Difference between foot and last.
2. Basic foot measuring and fittings. Different size system and its conversions.
3. Types of shoe lasts used in footwear industry. Various methods of last covering and form cutting.
4. Two dimensional geometrical designing and three dimensional designing on the shape of last. Production of upper and bottom pattern standards. Pattern grading by hand and machine. Production of prototype pullover for DERBY, OXFORD, MONK, BELLY, SANDALS, etc.
5. Surface defects of Hides & Skins. Ante mortem & post Mortem defects. Various parts of Hides & Skins- difference in fibre structure and line of stretch and strength.
6. Curing process of raw hides & Skins – Wet salting, dry salting, Sun drying.
7. Brief description of Tanning Process and their objectives.
8. Pre tanning and post tanning operation. Vegetable and Chrome tanning process for manufacturing of upper and lining leather. Analysis of vegetable and Chrome tanned leather.
9. Terms & description of finished leather (Terminology). Common defects of finished leather.
10. Physical properties of leather. Characteristics of leather required for manufacturing footwear. Selection of leather for upper & lining. Principles of upper clicking Uniformity of components in tightness & strength.
11. Economy and control of material consumption. Methods of estimating quantity of wastage for upper & lining materials.
12. Cutting of fabrics - wrap and weft system
13. Leather sorting and grading: specification of upper & lining leather. Fitting of upper and lining components. Closing of uppers with lining. Sequence of operations. Purpose of skiving and its different method. Purpose of edge treatment and its types. Materials used for edge treatment. Bottom finishing. Upper dressing and cleaning.
14. Purpose and use of reinforcements.
15. Description of machineries used in leather processing.
16. Principles of drafting and lasting of shoe for different construction. Methods of shoe construction. Importance of conditioning – Heat setting and drying of shoe uppers.
17. Use of various types of sole – PU, PVC, EVA, TPR, RUBBER, PLASTIC, etc. Their feature and methods of use with types of adhesive for the purpose.
18. Inspection and quality control – Packing of footwear.