LIST OF COMMIITTEE MEMBERS FOR THE

TRADE FITTER(DEAF AND DUMB)

Sl.No.	Members and Experts	Signature
1.	K. Panneerselvam, Regional Joint Director of Training Chennai Region Guindy, Chennai	
2.	S. Valsakumar, Principal, Govt. Industrial Training Institute, Guindy, Chennai 600 032	
3.	N. Sundaramoorthy, Principal, Training Centre for Adult Deaf, Santhome High Road, Chennai 28	
4.	G. Siraj Mohammed, Junior Training Officer, Govt. Industrial Training Institute, Guindy, Chennai 600 032	

COURSE DETAILS

Name of the trade	Fitter (Deaf & Dumb)
Qualification	VIII pass
Age	14-40 yrs
Duration	2 Years
No. of Trainees	20
No. of Practical Hours	32 hrs per week
No. of Theory Hours	12 hrs per week
Space Required	
Workshop	500 Sq.ft
Theory	300 Sq.ft
Power required in Kilo watt	3 KW

SYLLABUS FOR THE TRADE OF FITTER UNDER SCVT SCHEME
PERIOD OF TRAINING : 2 YEARS.

WEEK NO.	PRACTICAL WORK	WORKSHOP CALCULATION	ENGG. DRAWING	FITTER TRADE THEORY
1.	Importance of safety and general precaution trade development industrial economy of the country working of I.S.C. SYSTEM	Importance of safety and general precaution trade development industrial economy of the country working of I.S.C. SYSTEM	Drawing Introduction of Engg Drawing its Importance	Importance of Safety and General Precaution Trade Development Industrial Economy of the country working of I.S.C System.
2.	-do-	-do-	-do-	-do-
3.	-do-	-do-	-do-	-do-
4.	Measurement and comparison of sizes with calipers and rule	Common Fraction – Types of Fraction	Use of Drawing Instrument	STEEL RULE : Use of Rule commonly used in Engineering workshop. Units of Length care and maintenance of rules.
5.	-do-	Addition, Subtraction, Multiplication, Division of whole numbers at applicable to the trade.	Different types of lines	SAFETY AND FIRST AID: Importance of safety the Result of accident, safety precaution workshop, Safety precaution can machines and Equipment.
6.	Filing practice	-do-	-do-	CALIPERS : A transfer measurement Instrument Types of calipers, spring and stiff Joint type. Method of using calipers.
7.	-do-	-do-	Lettering and Numbering	TRI-SQUARE : Its construction and use checking the accuracy of a square. Its use for making out and locating the position of centers.
8.	Filling To Square	Subtraction	-do-	-do-

9.	Marking out of parallel Lines by Jenny Caliper	-do-	Details of plain and simple solid figures	SCRIBERS : Straight and curved or hook type. Method of scribing lines with the help of a rule and a scriber. Use of chalk or copper sulphate for prominence of lines
10.	-do-	-do-	-do-	DIVIDERS :Use setting dividers to dimensions. Care of the sharp points. JENNNY CALLIPERS :Their various uses and limitation. Methods of locating center on the ends of circular bars.
11.	Marking out of radius (DIVIDER)	Fraction, Decimals, Conversion of Fraction to decimals and vice versa.	-do-	CENTRE PUNCH AND DOT PUNCH: The correct angle of their points and their use.
12.	Marking out of Angle	-do-	-do-	SURFACE GAUGE AND VEE BLOCKS : Use in conjunctions with a rule and combination square
13.	Marking out of Square radius Test	Division Test	Dimensioning-(Test) Aligned system & unidirectional system	BENCH VICE : Functions and constructions details. Location and correct height vice jaws and their sizes for specification of vices vice clamps (Test)
14.	Marking out in Circle Angle & Different holes	Simplification of Arithmetical problems of fractions & decimal fractions.	Geometrical construction to draw a perpendicular to a given line from a point outside it	HACK SAW AND HACK SAWING:Solid and adjustable type. Standard no. of teeth per inch length of blade, presence and speed of cut.
15.	Marking out for outside caliber legs	-do-	To draw a line parallel to and at a given distance form a given straight line	CHISELS : Types and uses : Care and Maintains
16.	Marking out for diagonal "L" section	-do-	-do-	-do-

17.	Marking out of hexagon	Metric units – conversion of m.m into c.m c.m into metre, metre into k.m.	To divide a given straight line into any number of equal parts	FILES : TYPES OF FILES Cuts of Files – grade of files – Draw filing round surface file care and its use.
18.	HACK-SAWING AND FILING	-do-	TO BISECT A GIVEN ANGLE	Convexity of files. Its reasons, proper number of strokes per minute for study and accurate filing – Right method of fixing the handle – Care of files
19.	OPEN FITTING	English units :- Conversion of Inch into foot, foot into yard, yard into furlong, furlong into mile.	TO Trisect a given Right angle	ANGLE PLATES, PARALLEL BLOCKS – Their uses
20.	OPEN FITTING	-do-	To find the centre of a given ARC	SURFACE PLATE : Its construction use and care.
21.	Test	Test	Test	Test
22.	Filing square and true	Conversions-c.m. into Inch, metre into foot, k.m. into mile	To construct an equilateral triangle given the length of the side	HAMMERS : Safety precautions for chipping use of proper hammers – types of Hammers
23.	Chipping an Edge	-do-	To Construct a Square length of a side given	COMBINATION SQUARE SET : Blade, square head, protractor head centre head their uses, checking and setting
24.	Chipping sawing square fitting	Volume conversion:- Gallon into litters, Liter into gallon, cubicmetre into liters.	Scales – Plain Scale Diagonascale	SCRAPERS & SCRAPING : The object of at which scraping is desired. Various types and shape of scrapers – Method of scraping
25.	Sawing – Filling Chamfering	-do-	-do-	DRILLS AND DRILLING : Flat drills their cutting angles and lips. Grinding of a flat drill. Twist drill Straight flunked drill and spiral types-parallel and Taper shanks.

26.	Gap Fitting	Weight:- Metric systems, conversion of K.G. into Gram, Tone into K.G.	Pictorial Drawing – Isometric view.	DRILL : Various parts and their functions.
27.	Stepping – Filing & Chamfering	-do-	-do-	DRILL –Drill Grinding – common faults and their ill effects
28.	-do-	Weight:- English systems, conversion of K.G. into Litrepound, Tone into Litrepound.	-do-	DRILLS – Drill chuck – Key – drill – drift – sackets and sleeves
29.	SAWING – FILING – CHAMFERING	-do-	-do-	Drilling machine
30.	Drilling holes-Straight Line	Power:- Kilowatt into watt, H.P into watt.	-do-	Feeds for drilling – standard speed and feed for various metals – Holding of Job on drill machine table
31.	Drilling holes-Different size	-do-	-do-	Counter boring – counter sinking centre drill
32.	TEST	TEST	TEST	TEST
33.	USE OF NUMBERED DRILLS	Temperature:- Conversion of Centigrade into Fahrenheit. Fahrenheit into centigrade.	Method of Drawing, circles and arcs.	REAMERS : Types, uses
34.	Sawing – Grooving Chamfering	-do-	-do-	REAMERS : allowance of Reaming, Coolants used while Reaming
35.	do	Square root and problem related to trade.	Orthographic projection First angle & Third angle projection.	Method of working – sizes – safety precautions
36.	Filling flat and drilling	-do-	-do-	'C' CLAMP : Shape and sizes, metals, working principle
37.	Filling – Drilling and Grooving	-do-	-do-	TAPS : sizes of Tapes – Tapping procedure

38.	-do-	-do-	Orthographical Projection Third Angle Projection	Tap throw hole, blind holes, lubricants for tapping
39.	Stepping & Counter sinking	Percentage:- Conversion percentage to decimal.	- do -	Causes of broken taps – Reaming a broken tap from a hole
40.	'T' Fitting	-do-	-do-	Tapping methods – safety – to find hole size for tapping
41.	Fittings an insert	Conversion-Decimal to percentage.	- do -	TAP WRENCHES : CONSTRUCTION Standard dimensions – Taping blind hcle.
42.	Marking out, sawing & bending	-do-	-do-	EXTERNAL THREADING : Dies, Types, commonly used – solid and split Design of stocks and handles
43.	Single Stepped fitting and drilling	Conversion:- Fraction to percentage.	-do-	Method of threading with stock and die threading lubricants – setting the threading die.
44.	-do- Test	Area Of Square Test	-do- Test	Micro Meter Outside : Principle constructional features – Name of the parts such as frame, anvil, spindle, thimble and sleeve – Graduation Reading, use and on Metric micrometers and their use (Test)
45.	Double Stepped fitting and drilling	Percentage:-Manpower efficiency of machine, production of making parts, metal weight and cost problems related to trade.	Orthographic Projection Third Angle Projection	Micro Meter in side : Constructional features graduation reading, use and care
46.	-do-	-do-	- do -	Depth Gauge construction, use, depth, Gauge micrometer construction system of graduations use, care

47.	Stepped radius and drilling	-do-	- do -	Screw thread micrometer construction, use, care
48.	-do-	-do-	- do -	VERNIER CALIPERS : The principle of Vernier, use Vennier Caliper for inside and outside measurements, Graduations and care
49.	Chipping and filing keyways	Ratio and proportion-Finding forms and ratio proportion-Direct proportion and inverse proportions.	- do -	VENIER HEIGHT GAUGE : Construction, Parts, use and care
50.	-do-	-do-	-do-	VENIER BEVEL PROTRACTOR : Construction, Parts, use and care
51.	-do-	-do-	-do-	GEAR TOOTH VERNIER : Construction parts use and care
52.	Standard Splines And Spline Ways	-do-	-do-	SINE BAR : Construction parts use and care
53.	-do-	Mixed Direct and inverse proportions problems related trade.	- do -	DIAL TEST INDICATOR : Construction parts use and care
54.	Filing and Angle Fittings	-do-	-do-	TOLERANCE AND limits : Definitions, Basic dimension or size How Tolerance is denoted, Fits and allowance, type of fits
55.	-do-	-do-	-do-	This explanation with further divisions such as shrinkage fit etc.,
56.	Filing and Drilling Tapping – Test.	Test	Test	System of tolerance and limits, New all system I.S.I. System, such as Free fit, medium fit, sncy fit, shrinkage fit etc.(Test)

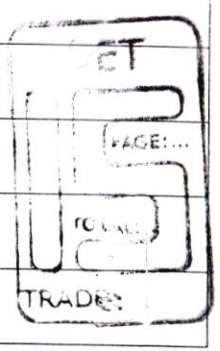
57.	-do-	Menstruation:- Find the area, Perimeter, Diagonal of square	-do-	SEREW THREADS: Thrminology of Threads, Types of Threads, B.S.W. B.S.F. B.S.P. B.A. and Metric thread
58.	Stiff jointed outside caliper	-do-	- do -	A.N. THREADS : Square thread, Butters thread, Aeme thread, knuckle thread in all types thread single and use single strat thread and double start thread multi start and left and right hand threads
59.	-do-	Find the area, Perimeter, Diagonal of Rectangle	-do-	GAUGES : Methods of measuring for inspection, purpose of gauges, need for gauging system, Fixed gauge, plug and ring gaug – snap gauges – taper gauge
60.	Friction joint inside Caliber	-do-	- do -	Radius gauge, wire gauge, Template gauge, Telescopic gauge and slip gauges.
61.	Forging a Hammer Head	Find the area of parallelogram	-do-	METALS : Main difference between metals & non metal description of physical & mech. properties
62.	-do-	Find the area of Rhombus	- do -	FERROUS METALS : Brief description of the manufacture of pig iron cast iron – Gray – moulded while seasoning of cast and use
63.	Mating contours to size	Find the area of Trapezium	-do-	Steel : Classification and Ally Steels – kinds and use
64.	Contour fitting	Find the area of Triangle	- do -	Non – Ferrous Metals : Instructions an important non-ferrous metals and alloys, copper zinc, antimony, aluminum-tin-brass

65.	-do-	Find the area of Right angle Triangle	-do-	Gum metal, white etc, their use, Rubber glass
66.	Rivetting	Find the area Triangle	-do-	Discuss fastenings permanent, semi permanent and temporary – locking devices – castle nuts, slotted nuts washers, spring washers, advantage of each type where generally used and why
67.	Square inside a square	Find the area of hexgon	Form of threads, bolts, nuts, screws, studs, washers and fasteners.	Key and Key ways : The pre requisites of a key prevention of circular and longitudinal motions of the making parts kinds – uses
68.	-do- Test	Test	Test	HEAT TREATMENT : Purpose of heat treatment. Annealing, normalizing, Hardening – case Hardening, (Test)
69.	Precision Drilling & Tapping	Find the area of circle.	Form of threads, bolts, nuts, screws, studs, washers and fasteners.	Carburising, Cyaniding – Nitrating, Tempering purpose of tempering
70.	Universal square Fitting	Find the area of circle ring.	-do-	GEAR : The terminology of a spur gear wheel such as pitch depth, addendum and dedendum. Helical Gear, Beval gear, worm gear, care and maintenance of gears
71.	-do-	Volume and weight :- Finding volume and weight of cube.	-do-	BEARINGS : Types, uses, journal bearing Foot step bearing, trust bearing, ball bearing
72.	Stepped And Radiual Fitting & Tapping	-do-	-do-	Roller bearing, needle bearing, bearing metals

73.	Angle & Radius gap fitting	-do-	-do-	SOLDERING AND BRAZING : Definitions with examples of soldering and brazing. Hard and soft solders. Fluxes and spotters.
74.	-do-	Find the volume & rate of cuboid	-do-	Their use – preparing the job for soldering – method of soldering
75.	Tongue and groove fitting	-do-	Rivet & type of riveted joint	RIVETS : riveting, types – uses, method of Riveting – use of snap and dolly.
76.	Drill Grinding gauge	-do-	-do-	LUBRICATOR : How lubrication is done. Simple definition of the term "Viscosity" and "flash point"
77.	Dovetail slide	Find the volume & weight of cylinder	-do-	Method of lubrication, cutting, lubricants and coolants soluble oil, Soap soda, paraffin soda, water common lubricating oils and other commercial names selection of lubricants
78.	-do-	-do-	Types of weld and symbols	JIGS : The object of jigs and their importance for preparing interchangeable components difference between jigs and fixtures
79.	-do-	-do-	- do -	Locating elements, clamping elements, screw bush, supporting elements
80.	Test	Test	Blue print reading simple exercises (Test)	Types of Jigs : Template Jig, plate Jig, channel Jig, Diameter Jig, leaf Jig, Ring Jig (Test)

81.	Dovetail angle fitting	Find the volume and weight of hollow cylinder.	Blue Print Reading Simple Exercises	FIXTURES : The definition of a fixture. Requisite pf a Good fixture used on drilling machines. Type of clamps and accessory.
82.	-do-	-do-	-do-	Simple fixtures uses for machining job on lathe, shaping machine, milling machine etc.,
83.	Straight and angle fitting	-do-	-do-	FIRE PRECAUTIONS : Causes and types of fires precautions against out break of fire. Fire extinguisher types and uses
84.	TEST	Find the material weight and cost problems related to trade.	TEST	TEST
85.	Make a Bolt and nutt	-do-	Free hand drawing of common tools welding and smithy tools.	Pipe and pipe fitting, pipe accessories
86.	Stepping, Radiusing and drilling	-do-	-do-	-do-
87.	Square inside A Square	-do-	-do-	-do-
88.	Universal Fitting	-do-	-do-	-do-
89.	Radius fitting	-do-	-do-	-do-
90.	Fitting insert	Common problem:- Find the area & weight of the reamining steel plate.	-do-	Welding – Flux, Type, Advantages

91.	Fitting inserts	-do-	-do-	-do-
92.	'X' Open fitting	-do-	-do-	-do-
93.	'X' Open fitting	-do-	-do-	-do-
94.	Revision	Revision	Revision	Revision
95.	-do-	-do-	-do-	-do-
96.	-do-	-do-	-do-	-do-
97.	-do-	-do-	-do-	-do-
98.	-do-	-do-	-do-	-do-
99.	-do-	-do-	-do-	-do-
100.	-do-	-do-	-do-	-do-
101.	-do-	-do-	-do-	-do-
102.	Test	Test	Test	Test
103.	Test	Test	Test	Test
104.	Test	Test	Test	Test



INDUSTRIAL SCHOOLS

TRADE SYLLABUS – REVISED

Name of the Trade : **FITTER (TWO YEARS)**
DEAF AND DUMB

SPACE REQUIRED

500
(1) Workshop/Lab : 450 sq. ft.

300
(2) Class Room : 200 sq. ft.

Trade Practical : No change

Trade Theory : No change

Engineering Drawing : No Change

Workshop calculation : No Change

List of TOOLS & EQUIPMENTS FOR THE TRADE OF FITTER DEAF AND DUMB

(FOR A BATCH PF 20 TRAINEES)

TOOL KIT

Sl.No.	DESCRIPTION	QUANTITY REVISED
1.	Rule Steel 15cm with metric graduation also	10
2.	Try Square 10 cm blade	10
3.	Caliper Outside 15cm spring	5
4.	Caliper inside 15cm spring	5
5.	Caliper inside 15cm Hermaphrodite	5
6.	Divider 15cm Spring	5
7.	Scriber 15cm	10
8.	Punch Centre 10cm	5
9.	Screw Driver 15Cm	5
10.	Chisel Cold 19mm	5
11.	Hammer Ball pane 0.45kg with a handle	5
12.	File Flat 25cm Second out	5

13.	File Flat 25cm Smooth	5
14.	File half round second cut 15cm	5
15.	Hacksaw frame adjustable 20-30cm	5
16.	Dot slot punch	5
	TOOLS – INSTRUMENTS & GENERAL SHOP OUT FIT PER UNIT	
17.	Rule Steel 30 Cm read metric also	2
18.	Rule Steel 60cm	2
19.	Marketing Table 91 x 91 x 122 cm height	1
20.	Universal Scribing block 22 cm	2
21.	Block – Vee pair 7cm and 15 cm with clamps	2
22.	Angle plate 10 x 20 cm	2
23.	Level sprit 15cm	1
24.	Punch Letter 3 mm set	1
25.	Punch Figure set 3 mm	1
26.	Punch hollow 6 mm to 19mm set of 5	1
27.	Punch round 3 mm x 4mm set of 2	1
28.	Portable hand drill (Electric) 0 to 6 mm	1
29.	Drill twist S/S 1.5mm to 12 mm by 0.4 mm	1 set
30.	Drill twist S/S 3 mm to 15mm by ½ mm	1 set
31.	Tape and dies complete set in box B.A	1
32.	Tape and dies complete set in box B.S.F	1
33.	Tape and dies complete set in box white worth	1
34.	Tape and dies complete set in box American	1
35.	Tape and dies complete set in box (Metric)	1
36.	File warding 15 cm smooth	4
37.	File knife edge 15 cm smooth	4
38.	File cant saw 15 cm smooth	4
39.	File feather edge 15 cm smooth	4
40.	File triangular 15 cm smooth	2
41.	File round 15 cm smooth	8
42.	File square 15 cm smooth	4

43.	File square 25 cm smooth	4
44.	Feeler gauge	1 set
45.	File flat 20 cm Bastard	10
46.	File flat30 cm second cut	10
47.	File flat 30 cm Bastard	20
48.	File Swiss type needle set of 12	2
49.	File half round 25 cm second cut	5
50.	File half round 25 cm Bastard	5
51.	File 30 cm Bastard	5
52.	File and 15 cm second cut	5
53.	Card File	4
54.	Pliers combination 15 cm	2
55.	Spanner adjustable 15 cm	2
56.	Glass magnifying 7 cm	1 set
57.	Clamp tool marks 5 cm and 7.5 set of 2	2
58.	Clamp "C" 5 cm	2
59.	Clamp "C" 10 cm	2
60.	Reamer adjustable max. 9mm, 12mm, 19mm, set of 2	1
61.	Reamer taper 4mm to 9mm set of 5	1
62.	Reamer parallel 6mm to 12mm set of 5	1
63.	Scraper flat 15 Cm	5
64.	Scraper 3 corner 15 Cm	5
65.	Scraper half round 15 Cm	10
66.	Chisel cold 9mm flat	2
67.	Chisel cold 9mm round noze	2
68.	Set combination 30 Cm	2
69.	Set combination 30 Cm	1
70.	Micro meter 0-2.5 Cm outside	1
71.	Micro meter 0-2.5 Cm outside	1
72.	Micro meter 0-25.50 mm outside	1
73.	Micro meter 0-50-75 Cm outside	1

74.	Micro meter inside 5 cm to 20 cm with extension rods	1
75.	Vernier height gauge 30 cm	1
76.	Vernier caliper 20 cm	1
77.	Vernier level protractor	1
78.	Screw pitch gauge	1
79.	Wire, gauge, metric standard	1
80.	Drill chuck 12 mm	1
81.	Pipe wrench 40 cm	1
82.	Pipe wrench 40 cm	1
83.	Piper vice No.4	1
84.	Adjustable pipe dia 0.205 cm cap	1
85.	Machine vice 10 cm	1
86.	Machine vice 15 cm jaw	1
87.	Vice bench 12 cm jaw	20
88.	Vice leg 10 cm jaw	1
89.	Bench working 240 cm X 120 cm X 60 cm	5
90.	Almirah 180 x 90cm x 30cm	3
91.	Locker with 8 drawers (Standard) Size	3
92.	Desk	1
93.	Stool	1
94.	Black board with easel	1
95.	Fire extinguisher (for 4 units)	5
96.	Fire buckets	2
97.	Machine Vice	2
98.	Wing compass 25.4 cm or 30 cm	2
99.	Hand hammer 1 kg with handle	2
General Machinery Installation		
100	Anvil 50 kg with stand	1
101	Drilling machine bench sensitive 0 to 12 mm motorised with chuck ande key	1
102	Forge portable hard blower 30cm to 4 cm	1
103	Grinding machine (General purpose) D.E. Pedestal with 17mm dia wheels rough and smooth with twist drill grinding attachment	1

ACHIEVMENTS:-

THE TRAINEE SHOULD ABLE TO

1. MARK PUNCH, CUT, CHIP AND FILE JOBS AS PER BLUE PRINTS AND ABLE TO FINISH AN ACCURACY OF 0.003''/0.08MM.

2. USE HEIGHT AND DEPTH GAGUE, MICROMETER AND VERNIER AND CALIPERS TO AN ACCURACY OF 0.001 INCH 0.01 MM

3. FILE TO AN ACCURACY OF ± 0.04 M.M. ON FLAT SURFACES AND ANGULAR SURFACES ± 5 MINUTES.

4. USE OF TAPS AND DIES CARRY OUT SIMPLE PLUMBING ASSEMBLY.

5. DISMANTLE AND ASSEMBLY SIMPLE MACHINE, PARTS AND ACCESSORIES.