

1	Name of Syllabus	C.C. IN BASIC FITTER (303108)																																								
	Max.Nos of Student	25 students.																																								
3	Duration	6 Months																																								
4	Type	Part Time																																								
5	No's Of Days / Week	6 Days																																								
6	No's Of Hours /Days	4 Hrs																																								
7	Space Required	Workshop = 300 Sq feet Class Room = 200 Sq feet TOTAL = 500 Sq feet																																								
8	Entry Qualification	VII passed																																								
9	Objective Of Syllabus/ introduction	Introduction – the syllabus Fitter has been evolved in such a way that after completion of course of 6 months , the student would acquire good working skill suited to work as Fitter . He would also gain confidence to operate various types of drilling machine , bench grinding machine etc. Objective:- 1) Develop skills in fitting and bench work. 2) Develop skill in job inspection with the help of precision instrument and gauges. 3) Develop confidence and entrepreneurship by arrangement industrial visit and lectures of personnel from industries																																								
10	Employment Opportunity	Self employment/ Wage employment																																								
11	Teacher's Qualification	1. I.T.I & NCVT in fitter trade 2. MCVC in mech. tech 2 year experience..																																								
12	Training System	Training System Per Week <table><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>6 Hours</td><td>18Hours</td><td>24 Hours</td></tr></table>						Theory	Practical	Total	6 Hours	18Hours	24 Hours																													
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13	Exam. System	<table><tr><td>Sr. No.</td><td>Paper Code</td><td>Name of Subject</td><td>TH/PR</td><td>Hours</td><td>Max. Marks</td><td>Min. Marks</td></tr><tr><td>1</td><td>30310811</td><td>BASIC FITTER</td><td>TH-I</td><td>3 hrs</td><td>100</td><td>35</td></tr><tr><td>2</td><td>30310821</td><td>GENERAL FITTER WORK</td><td>PR-I</td><td>3 hrs</td><td>100</td><td>50</td></tr><tr><td>3</td><td>30310822</td><td>COMPOSITE JOB</td><td>PR-II</td><td>6 hrs</td><td>200</td><td>100</td></tr><tr><td></td><td></td><td>TOTAL</td><td></td><td></td><td>400</td><td>185</td></tr></table>						Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks	1	30310811	BASIC FITTER	TH-I	3 hrs	100	35	2	30310821	GENERAL FITTER WORK	PR-I	3 hrs	100	50	3	30310822	COMPOSITE JOB	PR-II	6 hrs	200	100			TOTAL			400	185
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CURRICULUM :- BASIC FITTER

THEORY PAPER – I, BASIC FITTER

- 1 :- Importance of safety and general precautions, related instructions achievement to made and necessary guidance to be provided to new comers to familiar with the trade.
- 2 :- The use of bench vice, types, its care and maintenance vice clamp hack saw frame blades descriptions types and their uses, method of using hacks saw.
- 3:- Linear measurement and its unit steel rule divide, caliper center punch their description use and care. Use of making media, Different types of hammers and its uses, use of 'V' block.
- 4 :- Files, description, material grade, cuts, file elements, uses, Try- Square, ordinary depth gauge protractor its descriptions and use and care.
- 5 :- Marking layout with the help of divider scribing block odd leg caliper material types of cutting angle.
- 6 :- Care, maintenance and uses of surface plate angle plate parallel block.
- 7:- Physical property of engineering metals and mechanical properties.
- 8 :- Hacksaw frame types adjustable and fixed type hacksaw blades flexible all hand and soft center setting and use of blade.
- 9 :- Types of drilling machines and drilling process.
- 10 :- Use of micrometer, outside, inside, its reading and care. Vernier caliper, Bevel protractor, its use, reading and care.
- 11 :- Drill holding devices types of drill bits cutting speed and feed. Drill troubles causes and remedies equality of lips corrector clearance dead center, length of lips and grinding of drills.
- 12 :- Use of bench grinding machine, grinding wheels, types, specifications, mounting and dressing.
- 13 :- Use care and maintenance vernier height gauge and its constructions. Describe ferrous and non ferrous metals in brief.
14. :- Screw thread types and their uses, screw pitch gauge, its use. British standard B. S. W. B. A. metric thread etc
- 15 :- Use of Taps tap drill size, tap wrench, removal of broken taps, studs tap stud extractor. Dies. B. S. W. Metrical I. S. I. Die stock, their material of parts and uses.
- 16 :- Scrappers, its types and methods of scraping objective of preventive maintenance and its importance simple repairs works simple assemble work of machine parts.
- 17 :- Key and keyways, tapers, nuts and bolts and their washers, gauges, radius and feeler necessity of wire gauge.
- 18 :- Locking devices, types of nuts and bolts, and their different uses. –

- 19 :- Fixture, the definitions of fixture, types of jigs, bush and jig clamp.
- 20 :- pipe and pipe fitting, pipe bending methods pipe threading use of pipe die and pipe vice
- 21 :- Lubrications and lubricants coolants, soluble oil etc. Errection tools, crow bar, spirit level, pulley block, plum block, wire rope, manila rope and foundations bolts.
- 22 :- orthographical drawings of simple objects hand tools sketching on sketch book. Blue print reading etc. Simple mathematical calculations on area and volume of rectangles, squares, triangles, circles etc. with different types of problems on each type.

PRACTICALS :- I GENERAL FITTER WORK

- 1 :- Importance of trade training, machinery used in the trade. Types of works done by trainees and introductions to safety equipments and their uses. -
- 2 :- Filling practice on flat ,parallel filling, flat filling and square filling (rough finish)
- 3 :- Marking outlines hack sawing different types of metals of different sections.
- 4 :- Filling practice, squaring, marking of straight and parallel lines with the help of caliper, divider etc.
- 5 :- Marking and filling , marking a squaring, marking of straight and parallel lines with the use of Try-Square.
- 6 :- Finding the center of round bar with the help of 'V' block and surface gauge and marking.
- 7 :- Chipping practice, chipping a slot and oil groove shearing with chisel.
- 8 :- Filling the radios, convex and concave surface on metal jobs.
- 9 :- Drilling practice, drilling the different types of through holes on metals pieces
- 10 :- Enlarging the holes increasing the internal diameter step by step on drilling machine.
- 11 :- Drilling grinding, counter sinking, counter boarding, spot facing pilot drill and drilling
- 12 :- Prepare inside square fit, make combine open and sliding fit, straight slides and 'T' fit.
- 13 :- To form internal threads with taps through holes blind hole tapping, prepare stud and bolts
- 14 :- To prepare external threading with the help of hand dies to standard sizes, prepare nut and match with bolts.

PRACTICALS :- II COMPOSITE JOB

- 1 :- Scrapping to close precision limits, scrapping of bearing seat and fitting of bearing.
- 2 :- Filling and fitting the combine radius and angular surfaces.
- 3 :- Practice on testing of machine tools and general maintenance.
- 4 :- Prepare palm end on a cylinder, prepare triangle, hexagonal on end of cylindrical bar, prepare female end and fit.
- 5 :- As per general work of end finishing and actual job fitting Giving the shapes as grooving, tapering etc.
- 6:- Making a simple jig and fixture for drilling.
- 7 :- Cutting the threading on pipe, fitting of pipe with its fitting as per sketches.
- 8 :- Simple riveting work and simple sheep metal jointing as required in general work.
- 9 :- Making of keys, cotter pins of different slices.
- 10 :- Brazing and soldering practice on simple jobs.
- 11 :- practice on general gas and are welding on simple jobs.

LIST OF TOOLS AND EQUIPMENTS :-

SR.NO	NAME OF THE TOOLS & EQUIPMENT	QUNTY.FOR INSTR.	TRAINEES	TOTAL
(1)	(2)	(3)	(4)	(5)
1.	Steel Rules 15 cm.	1	8	21
2.	Try- square 10 cm. blade.	1	8	21
3.	Outside caliper 15 cm.	1	8	21
4.	Inside caliper 15 cm.	1	4	21
5.	Divider 15 cm.	1	4	21
6.	Scriber 15 cm.	1	4	21
7.	Center punch 10 cm.	1	8	21
8.	Screw driver 15 cm.	1	4	21
9.	Ball pain hammer, 0.45 kg.	1	4	21
10.	Chisel Cold 10	1	4	21
11.	Hammer ball pain 0.22 kg.	1	8	21
12.	Flat file 25 cm. second cut	1	8	21
13.	Flat file 25 cm. smooth.	1	4	21
14.	File half round second cut 15 cm.	1	8	21
15.	Hacksaw frame adjustable 20-30 cm.	1	8	21
16.	Safety goggles	1 Pair	20 Pairs	21 Pairs
17.	Dot punch	1	8	21

	<u>Instruments and General Shop Outfit Per Unit.</u>	
18	Steel rule 30 cm.	4
19	Steel rule 60 cm.	2
20	Surface plate 45 cm 45 cm.	1
21	Marking table 91 91 122 cm height.	1
22	‘V’ Block pair 7mm and 15mm with clamp	1
23	Universal scribing block 22 cm.	1
24	Angle plate 10 20 cm.	2
25	Letter punch 3mm set	1
26	Number punch 3 mm set	1
27	Hollow punch 6 mm to 9 mm set of 5,	1 set
28	Round punch 3 mm to 4mm set of 2,	1 set
29	Portable hand drill (Electrical) (0 to 6 mm)	1
30	Twist drill S/S1 .5 to 12 mm by 0.44 mm.	1 set
31	Twist drill S/S 8 mm to 15 mm by 0.5 mm.,	1 set.
32	Taps and dies set complete in box B. A.	1
33	Taps and dies set complete in with word	1
34	Taps and dies set complete in box American	1
35	Taps and dies set complete in Metric.	1
36	Knife edge file 15 cm.	4
37	Cut saw file 15 cm.	4
38	Triangle file 15 cm	4
39	Round file 15 cm.	4
40	Square file 25 cm.	4
41	Triangle file 20 cm.	4
42	Flat file 30 cm. second cut	8
43	Flat file 20 cm. bastard	8
44	Flat file 30 cm. bastard	8
45	Half round file 25 cm second cut	4
46	Half round file 25 cm bastard	4
47	Round file 30 cm. bastard	4
48	Hand file 15 cm. second cut	8
49	Card file	4
50	Oil can 0.25 lit. cap.	2
51	Combination pliers	2
52	Soldering iron 350 gm.	2
53	Blow lamp 0.55 lit.	2
54	D. E. Spanners 6 mm to 25 mm, set	2
55	Adjustable spanner 15 cm, set	1
56	Apollo Box spanner set 3 mm to 25 mm	1 set
57	‘C’ clamp 5 cm and 10 cm	2 each
58	Scraper flat 15 cm.	4
59	Scraper half round 15 cm	4
60	Cold chisel 19 mm.	2
61	Cold chisel 9 mm cross cut, 9 mm Diamond	4
62	Stud extractor Ezy-out	2
63	Combination set 30 cm.	1
64	Micrometer out side 0-2.5 cm.	2

65	Micrometer out side 25mm-50mm.	1
66	Micrometer in size 5cm-20 cm. with extension rod	1
67	Vernier caliper 20 cm.	1
68	Vernier height gauge 30 cm.	1
69	Filler gauge.	2
70	Screw pitch gauge.	1
71	Wire gauge Metric standard	1
72	Twist drill T/ S 6 mm to 25 mm 1.5 mm,	1 set
73	Drill chuck 12 mm.	1
74	Pipe wrench 25 mm& 40 mm.	1 each
75	Pipe vice No. 4.	2
76	Adjustable pipe die 0-205 cm cap.	1
77	Wheel dress-ser	1
78	Machine vice 10 cm	1
79	Drill slives M. T. 0-1, 1-2,2-3	1 set
80	Bench vice 12 cm jaws	20
81	Working bench 240 cm X 120 cm X 60 cm.	5
82	Almirah 180 X 90 X 30 cm	2
83	Lockers with drawers std size (8 drawers)	3
84	Desk	1
85	Metal rack 182X182X45 cm.	1
86	Stool Wooden	1
87	Black board	1
88	Fire extinguisher	2
89	Fire buckets	4
90	Wing compass 25.4 cm or 30 cm.	2
91	Hand hammer 1 kg. with handle.	2
	<u>GENERAL MACHINERY INSTALLATION</u>	
1	Anvil 50 kg.	1
2	Pillar type sensitive drilling m/c, 0-20mm. cap. Drill chuck and key.	1
3	Bench type drilling, 0-12mm. with chuck and key.	1
4	General purpose Grinding machine 20 mm dia.	1

REFERRANCES BOOKS:-

1. Workshop Technology by, Hajara Chaudhari Vol. I and II
2. Workshop Technology, by Raghuwanshi
3. Fitter Theory –M.B.Dandgavhal
