

MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI-51

1	Name of Syllabus	C. C. IN LATHE MACHINE OPERATOR (303137)																																			
2	Max.Nos of Student	25 Students																																			
3	Duration	Six month																																			
4	Type	Part Time																																			
5	Nos Of Days / Week	6 Days																																			
6	Nos Of Hours /Days	4 hrs.																																			
7	Space Required	1) Workshop = 800 sq feet 2) Class Room = 200 sq feet TOTAL = 1000 sq feet																																			
8	Entry Qualification	8 th Pass																																			
9	Objective Of Syllabus/ introduction	Introduction – the syllabus of C.C. In lathe machine operator such a way that after completion of course, the student would acquire good working skill suited to work as Turner in workshop. Objective:- 1) Develop adequate knowledge of engg. drawing . 2) Develop skills in job inspection with the help of precision measuring instrument and gauges. 3) Provide a sound working operational knowledge of lathe machine . 4)Handling & uses of different																																			
10	Employment Opportunity	Self employment/wage employment																																			
11	Teacher’s Qualification	ITI/ NCVT in turner with 2 year experience or MCVC in mech.tech.																																			
12	Training System	Training System Per Week <table><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>06 hrs</td><td>18 hrs</td><td>24 hrs</td></tr></table>							Theory	Practical	Total	06 hrs	18 hrs	24 hrs																							
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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>Mini. Marks</td></tr><tr><td>1</td><td>30313711</td><td>TURNER THEORY</td><td>TH-I</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>2</td><td>30313721</td><td>TURNING PRACTICAL</td><td>PR-I</td><td>6 hrs.</td><td>200</td><td>100</td></tr><tr><td>3</td><td>3031722</td><td>COMPOSITE JOB</td><td>PR-II</td><td>3 hrs.</td><td>100</td><td>50</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	Mini. Marks	1	30313711	TURNER THEORY	TH-I	3 hrs.	100	35	2	30313721	TURNING PRACTICAL	PR-I	6 hrs.	200	100	3	3031722	COMPOSITE JOB	PR-II	3 hrs.	100	50			Total			400	185
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Syllabus :- LATHE MACHINE OPERATOR

Practical - I TURNING PRACTICAL		Theory - I TURNER THEORY
1)	Introduction Safety Productions	Importance of safety pre-cautions and its observance in the Workshop.
2)	Marking Chipping Chisels grinding	Steel Rule-Types gradation Hammer – Types and uses. Punches – Types and uses. Chisel – Types and uses.
3)	Filing Practice Surface finish & 'H' angle	Files : Types-Uses material shapes & specification Caliper-Types, Uses. Try square – uses.
4)	Drilling Hack Sawing	Centre punch Drill machine – Types, Sizes Hacksaw blade-Pitch, Size.
5)	Tapping & Die threading Pipe threading	Taps-types Card Drill-Size Die-Types,Uses,Dicstock
6)	Lathe checking in proper condition Lubricating various.	Lathe construction Main parts Lubricating methods and preventive maintenance with daily, weekly, monthly, quarterly and yearly etc., and its importance in relation with machines.
7)	Grinding lathe tools Holsing methods	Accessories – 1) Four chuck- constt. Material use Cutting tool – Shape and parts Angles and Information about materials.
8)	Facing centre drilling Tool grinding	Centre drill-sizes-use Drill chuck uses constt.
9)	Checking lathe between centre turning Tool grinding+	Accessories-Centre. Types use. Cutting tool-Variou angles.
10)	Parallel turning	Cutting speed and feed. Cutting lubricant Tool-roughing and finishing.
11)	Step turning	Cutting toll-knife tool Recessing tool, Depth rule.
12)	Drilling	Drill-Parts,types, Angles C.S. for various material.
13)	Boring, Step boring Step turning	Know how about out-side micrometer and vernier caliper etc.
14)	Step turning	--- do --- Metric system --- do --- --- do ---
15)	Stop Boring, Non ferrous metal	Know how about inside micrometer Coolant use for various metals. Depth micrometer etc.

16)	Reaming and Kurling	Reamer-Parts, types C.S. for various operation cooler use.
17)	Fetting Desemeter metal	knurling tool-Types use gauges use types.
18)	Tapping in Lathe die threads	Process and care maint calculation of cordial Drill size-
19)	Gear blank turning with mandrel	Accessories – Driving const. Use, carrier- Types. Uses Mandrel- Types.

Practical - II - COMPOSITE JOB

20)	Taper turning by C.S.R.	Taper Definition. Advantages and disadvantages Vernier level Protractor.
21)	Taper by effec t method	Advantages and disadvantages Accessories – Boll centre.
22)	Taper by form tool	Advantages and disadvantages Use on capstan lathe-
23)	Accentric turning	B.V. Block V. height Gauge. Dial test indicator.
24)	-- “ --	Faceplate Use Angle plate Use Balancing weight-Advantages. Commenation set
25)	Advance work on Face plate Split bearing.	
26)	Threading B.S.W. Std., Internal & External	Tool-shape,cutting Threads difference Dimension.
27)	-- do --	Cat-Pitch depth. Core dia.
28)	Threads I.S.I.	Thread-Advts & dimensions Tool form, depth, core dia.
29)	Threads square	Advantages and disadvantages Tool form-dimensions Cat-Core dia, pitch, depth,etc.
30)	Screw cutting on non ferrous metal	Hand Chessers-Types Uses M/c. Chesser -- “ – Threads form tool angle etc.,
31)	Acme threads & other forms Calculation-Loose.	
32)	Metric threads on British Lathe & viceversa.	Use of 127 63 Tech gear Gear train calculation.
33)	Multistart threads	Difference between head and pitch, Methods of setting tool gear train
	Calculations.	
34)	Work involve in steadies	Steady-Types uses, parts.
35)	Visit to factories to observe advance work	Capstone Turret-difference advantages, Mass Production etc.

List of Tools and Equipments

For Trainees

1.	Calliper outside	05 Nos.
2.	Calliper inside	05 Nos.
3.	Calliper odd legs	05 Nos.
4.	Steel Rule 6" (Metric graduation)	05 Nos.
5.	Centre punch	05 Nos.
6.	Screw driver 8"	05 Nos.
7.	Goggle	05 Nos.
8.	Divider spring	05 Nos.

Equipment Tools

1.	Surface plate	1 No.
2.	Bench work	1 No.
3.	Bench vice	5 No.
4.	Univarsal guage	2 No.
5.	V Blook pair	2 Pairs
6.	Hammer 1.1/2 Lbs.	5 Nos.
7.	Chissel	5 Nos.
8.	Hacksaw Adjustable	5 Nos.
9.	Needle file set	2Sets
10.	File 4 2 nd cut 6" (Tri)	2 Nos.
11.	File 4 2 nd cut 6"	2 Nos.
12.	File 2 nd cut 10" Flat	2 Nos.
	File smooth 10"	4 Nos.
	Files bastered 12"	4 Nos.
	Files half round 2 nd cut	4 Nos.
	Files smooth	4 Nos.
	Files bastered	4 Nos.
	Round file	4 Nos.
13.	Spanner Double ended 1/2" to 1 by 1 / 16	3 Sets
14.	Flier combination	2 Nos.
15.	Chesser I/S O/S	1 Set
16.	Knurlling Toll (Set of 3)	3 Nos.
17.	Micrometer outside 0-25	2 Nos.
	25-50	2 Nos.
	50-75	2 Nos.
	Micrometer inside	1 No.
18.	Depth gauge	1 No.
19.	Vernier caliper 8"	2 Nos.
20.	One side metric graduation	
21.	Vernier Revel promoter	1 No.
22.	Radius Gauge	2 Nos.
23.	Central gange	3 Nos.
24.	Screw petch gauge	2 Nos.
25.	Dial Test Indicator	1 No.
26.	V. height gauge	1 No.
27.	Rig & Plug Sauges	
28.	Oil Stone	2 Nos.
29.	Try square 4" and 6"	2 Nos.
30.	Wheel dresser	2 Nos.
31.	Set of Allen Keys 1 / 32 " 1/2 " x Metric	1 Set
	Allen Key 1 to	1 Set
32.	Table	1 No.
33.	Chair	1 No.

34.	Metal table 4" x 2.2 1 / 2" x 2.1 / 2"		
35.	Tap and die set	B.O.W.	1 Set
	-- do --	B.S.F.	1 Set
	-- do --	Metric	1 Set
36.	Drills & Twist 1/16' " 1/2 "		
37.	Drills & Twist 3 mm to 25 mm		
38.	Drill chuck 1/2 "		
39.	Sleeves 0-1, 1-2, 2-3, 3-4		2 Set
40.	Reamers Fluted Ind 7 Machine 1/4 " to 1"		1 Set
41.	Holder (tools) 2 II R.		
42.	Oil Can 1/2 pint		6 Nos.
43.	Grease gun		2 Nos.
44.	Carriers 1", 2"		12 Sets
45.	Chuck Independent 8 & 10"		05 Nos. & 5 Nos.
46.	Chucks self contring		6 Nos.
47.	Angle plate sloted		2 Nos.
48.	Grinding attachment (Tool Post)		1 No. (Int. Ext.) each
49.	Taper		
50.	Almirah 6x3x1.12/2		2 Nos.

General Machinery

Lagthe gun purpose S.S.S.C. Cone pully	Type 6" Centre height
Motorise	
Lathe General purpose all gear	6 Nos.
Power drill machine 3/4 " cap.	1 No.
Pedastal grinde 10" wheel with And Grinding attachment	1 No.
Bench D. E. Grinded - wheel	1 No.
